KINGIA

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Western Australian Herbarium
Department of Conservation and Land Management

Cover

Kingia australis R.Br. - Black Gin. Robert Brown named the genus *Kingia* in honour of his friend, the surveyor-explorer Captain Phillip Parker King and in memory of Captain Philip Gidley King, a governor of New South Wales.

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Department of Conservation and Land Management,
Western Australia

INSTRUCTIONS TO AUTHORS

Kingia publishes papers on the flora and vegetation of Western Australia. Taxonomic papers should be directed to the Herbarium's journal *Nuytsia*.

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Headings. All headings including the title of the paper should be typed in lower case, with only the first letter of the first word and proper nouns capitalized. Major headings (Abstract, Introduction, Methods, Results, Discussion, Conclusions, Literature Cited) should be centred and typed in bold. Subheadings should be left justified and typed in bold. Sub-subheadings are run-on headings in italics and are followed by a full stop.

Title. This should be concise and informative; it should also include all keywords to facilitate retrieval by modem searching techniques. An abridged title suitable for use as a running heading at the top of the printed page and not exceeding 50 letters should also be supplied.

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References. References are cited in the text by author and date. All references in the text must be cited at the end of the paper with the names of the authors in alphabetical order. In the text the names of two co-authors are linked by "&", for three or more the first author is followed by *et al*. The titles of papers and the first and last page must be cited. Names of Journals, bulletins and reports should be given in full. They should not be underscored or put into italics.

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Figures. Figures should be submitted in their final size for printing. Numbering should follow a single sequence and include all maps, illustrations and photographs. They should be numbered in the order cited in the text. In the text and in the captions use the style of "Figure 1". Authors should indicate where the figures are to be inserted into the text.

Voucher specimens. It is suggested that botanical names central to the objective of the paper be supported by specimens deposited in a recognised herbarium and that the institution be indicated in the paper. Collecting numbers of specimens whose determination is uncertain should be cited in the paper.

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Kingia 1(3): 255-281 (1990)

Checklist of the coastal flora of the South-West Botanical Province, Western Australia

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Abstract

Beard, J.S. Checklist of the coastal flora of the South-West Botanical Province, Western Australia. Kingia 1(3): 255-281 (1990). A checklist of the coastal flora found within the South-West Botanical Province was compiled. The list comprises 1067 vascular plants species, of which 166 or 15.5% are naturalised aliens. Distribution within Botanical Districts, habitat and endemism data are also presented.

Introduction

This checklist was compiled in conjunction with a chapter on the coastal vegetation of south-western Australia prepared for a volume "Dry Coastal Ecosystems of the World" edited by E. van der Maarel and D. Goodall, to be published by Elsevier. By definition in the book, coastal vegetation is that of beaches, dunes and cliffs. It has been taken to include consolidated dunes and thus the coastal limestone throughout, as well as headlands and slopes under the influence of the sea.

The coastal flora of south-western Australia has been made known and popularized over many years by G.G. Smith in a series of handbooks (1957, 1973, 1985) and Mr Smith kindly loaned his card index as an initial basis for the present compilation. Although the titles of his successive works suggest that they relate to the whole South-West Botanical Province, in fact the flora listed is only that found within a radius of some 50 km of Perth, and it was necessary to augment his data by reference to other authors. The coast of the South-West Botanical Province extends from Tamala close to Shark Bay in the north round to Twilight Cove on the Great Australian Bight (Beard 1980), a distance exceeding 2200 km. Within this length the coastal islands have received intensive study of their flora, initially by Willis (1953) for the Recherche Archipelago, latterly by Abbott in Abbott and Black (1978), Abbott and Watson (1978), Abbott (1980, 1981), Marchant and Abbott (1981). These papers incorporate the records of earlier collectors. The flora of the islands can therefore be said to be well known.

The flora of pioneer vegetation on the mainland coast was similarly studied in detail by Sauer (1965) at 26 sites within the South-West Botanical Province where he listed 110 species. By combining all the data together it can be inferred that the flora of the whole south-western littoral is well known. For the vegetation of consolidated dunes and headlands behind the immediate littoral however we have very much less information. The Drummond Sub-district is well covered in detailed flora lists by Bell, Loneragan and Dodd (1979) with 209 species, Bridgewater and Zammit (1979) 103 species, Fox, Downes and Maslin (1980) 350 species, and Backshall and Bridgewater (1981) with 23 species. For the Irwin District an unpublished list of 340 taxa was made available by the authors, R.T. Wills and D.T. Bell, compiled for a nature reserve, the "Beekeepers' Reserve" No. 24496 in Lat. 29°30' to 30°00'. In the Warren Sub-district there is a short list of 28 species for a locality near Albany by Enright (1978), and at the eastern extremity of the Eyre District a list of 112 taxa by Nelson (1974) for the flora of cliff-top dunes along the Great Australian Bight. For the long stretches of coastline between, the memoirs of the Vegetation Survey of Western Australia - Beard (1972-80, 1975), F.G. Smith (1972-73) - contain many records but are not exhaustive as they tend to mention merely the most conspicuous or dominant plants.

The checklist was compiled using all the above sources. It is believed to be reasonably complete for littoral plants but less so for those of consolidated dunes further inland. Nomenclature was carefully checked against Green's (1985) Census which is regarded as the ultimate authority for Western Australia, except that I reject the genus *Allocasuarina* L. Johnson. Records of a doubtful character, e.g. as "sp.", "aff." or queried, were omitted. Infraspecific taxa are not included. Due to nomenclature changes a number of names not included in Green's Census came to light, and advice was sought as to how these should be interpreted. The checklist is arranged with the families in taxonomic order as in Green's Census. Within families, genera and species are arranged alphabetically.

The capital letters in the "District" column of the checklist refer to Botanical Districts (Beard 1980) as follows:

I = Irwin District
D = Drummond Sub-district
W = Warren Sub-district
E = Eyre District

Strictly speaking Warren is separated from Drummond on the north and Eyre on the east by a short stretch of the Menzies Sub-district in each case but this has been ignored here for practical purposes. The Irwin District has a Xerothermomediterranean climate with annual rainfall of 300-500 mm and 7-8 dry months per year. The Drummond Sub-district has a Thermomediterranean climate, rainfall 600-1000 mm and 5-6 dry months. The Warren Sub-district has a Mesomediterranean climate, rainfall 650-1500 mm / and 3-4 dry months. The Eyre District is Thermomediterranean, rainfall 500-700 mm, 5-6 dry months (Classification from Bagnouls and Gaussen 1957).

The letters a,b,c and d in the "Habitat" column of the checklist classify habitats as follows:

a = Aquatic. Plants of estuary and lake margins, salt marshes, freshwater swamps, phreatophytes and plants of ephemeral pools. Sea-grasses have been omitted.

b = Beach. Sand fixers and colonizers on beaches, and sand patches disturbed by burrowing birds, plants of foredunes and mobile dunes.

c = Cliff. Includes rock pavements and outcrops, and steep spray-swept slopes.

d = Dune. Stable and consolidated dunes, also granitic and other matured soils included in the coastal belt. A qualification "dl" is made for species considered to be essentially littoral, i.e. occurring under the influence of the sea, although on a stable substrate. Other "d" plants are considered to be inland species which happen to occur on coastal material.

Habitats were given by Smith (1973) for all listed plants and by many authors for all or some species. It has been possible to classify all species in the checklist with varying degrees of certainty; some of course qualify for more than one habitat.

The number of coastal species listed by Smith rose from 359 in 1973 to 492 in the 1985 edition. The present list for the whole coastline comprises 1067 species, and is still incomplete. One hundred and sixty-six species or 15.5% are naturalized aliens.

Species recorded by Districts total as follows:

Irwin District	380
Drummond	620
Warren	256
Eyre	445

The differences are believed due principally to inequality in the published records, although inequalities in the extent and type of habitats also exist.

Wetland species typified as "a" were included for completeness although not always classified as "Dry Coastal". Some occur in b, c and d habitats, mainly halophytes which occur both in salt marshes and in areas subject to sea spray. The true wetland species which are not recorded for any additional habitat number 96 (of which 16 are aliens) so that the Dry Coastal flora becomes 971. This number is again divisible into 308 littoral species (habitats b,c and dl) 663 inland species. It might be supposed that naturalized aliens would be more frequent in the open, disturbed littoral habitats, and in fact the number recorded for the littoral is 72 or 23% of littoral species, as against 78 or 12% of the inland species.

We are left with 236 native species for the littoral and 585 for the inland group, as well as 80 "aquatics". Endemism among these was investigated by looking up the names in the flora checklists for the other Australian States, i.e. Jessop (1984) for South Australia, Forbes *et al.* (1984) for Victoria, Jacobs and Pickard (1981) for New South Wales, and a computer print-out issued by the Northern Territory Herbarium. Queensland does not publish a census but the likelihood of a south-western species occurring there and not in the intervening States was considered remote. The same applies to Tasmania. If a name was not found in this search it was assumed to represent an endemic to Western Australia. Species which were found to occur in other States were further classified as Australian if confined to Australia, or as having a wider distribution. Only the New South Wales census among those consulted gives distributions, so that additional reference was made to Black's Flora of South Australia (1960, 1978). There are no doubt errors in this treatment but they should not be significant.

Results of this study were as follows, in numbers of native species:

	Endemic to Western Australia		Endemic to Australia		Wider distribution		Total
Aquatics	21	(26%)	30	(38%)	29	(36%)	80
Littoral spp.	121	(51%)	94	(40%)	21	(9%)	236
Inland spp.	451	(77%)	117	20%)	17	(3%)	585
Total Dry Coastal	572	(70%)	211	(25%)	38	(5%)	821
Total all spp.	593	(66%)	241	(27%)	67	(7%)	901

It will be seen that endemism varies greatly between the three groups. In the "aquatics" a large proportion is cosmopolitan, a similar proportion Australian, and a smaller number endemic. In general it is found that water-dwelling plants, such as reeds of the families Cyperaceae and Juncaceae, tend to be cosmopolitan, salt-marsh species are Australia-wide, while peripheral species include the endemics. Among the littoral group cosmopolitan species are few, and endemics slightly outnumber Australia-wide species. Inland species, as may be expected, share the general characteristic of the south-western flora with a very high rate of endemism (77%), the rest mainly Australian (20%), with cosmopolitans reduced to an insignificant number (3%).

It has long been known that the flora of the South-West Botanical Province is characterized by great endemic richness (Beard 1969, Marchant 1973) though reliable figures are still not available. The less endemic, more cosmopolitan character of wetlands in the Province was shown by McComb and McComb (1967). Freshwater lakes and swamps provide habitats which are widely similar throughout the world and, subject to climate, can be expected to be occupied by cosmopolitan species. Both salt-marshes and the littoral provide habitats which occur generally in southern Australia, and contain a high proportion of Australian species. South-western Australia in general is highly specialized both in climate and soils - especially soils - so that its flora has become highly specialized also.

It is possible to enquire further whether any of the 121 Western Australian endemics among the littoral species are locally endemic to a particular district. Fifty three of them are recorded in the checklist from a single district only: Irwin 6, Drummond 9, Warren 1, Eyre 37. However this may only be an apparent effect due to a lack of records. Distributions by Districts are given in Beard (1970), and in so far as this information is reliable, 26 of them appear to be confined to a single district:

Irwin District: *Grevillea argyrophylla* *Lepidium linifolium*
Pimelea floribunda

Drummond: *Grevillea crithmifolia*

Warren: None

Eyre: *Adenanthos forrestii* *Banksia dryandroides*
Banksia media *Banksia praemorsa*
Boronia albiflora *Bossiaea dentata*
Calothamnus spinifolius *Dillwynia pungens*
Dryandra pteridifolia *Gahnia drummondii*
Goodenia quadrilocularis *Hakea clavata*
Isopogon buxifolius *Leptospermum sericeum*
Lomandra rigida *Melaleuca violacea*
Oxylobium drummondii *Poa porphyroclados*
Stylidium glandulosum *Styphelia hainesii*
Verticordia minutiflora *Xanthorrhoea platyphylla*

The distributions given in Beard (1970 Second Edition) do appear to lend support to the data in the checklist. Few of these appear to be strictly littoral species confined to the littoral itself. The only obvious case is *Leptospermum sericeum* which is confined to the Recherche Islands and adjacent mainland.

Acknowledgements

The writer is indebted to Mr Gordon Smith for the loan of his card index to coastal species, to Mrs Pauline Fairall for assistance in compiling the catalogue, to Dr J.W. Green and staff of the Western Australian Herbarium for dealing with a large number of queries about nomenclature, and to Dr N.G. Marchant, Mr P.G. Wilson and Mr N.S. Lander for advice on particular groups.

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1973a - Ravensthorpe
1973b - Esperance and Malcolm
1976a - Shark Bay
1976b - Ajana
1976c - Geraldton
1976d - Dongara
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1980b - Albany and Mt Barker

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Checklist of the coastal flora of the South-West Botanical Province, Western Australia

Compiled by J.S. Beard, 1985

Key to symbols:

	Districts:			Habitats:			Distribution (native species):		
*Naturalized alien	I	=	Irwin	a	=	Aquatic	e	=	endemic to W.A.
	D	=	Drummond	b	=	Beach	Aus.	=	endemic to Australia
	W	=	Warren	c	=	Cliff	W	=	Wider distribution
	E	=	Eyre	d	=	Stable dune			
				dl	=	Littoral sp. on stable dune			

PTERIDOPHYTA

Isoetaceae									
Isoetes drummondii A. Braun				E	a				Aus.
Adiantaceae									
Anogramma leptophylla (L.) Link		D					c	d	W
Cheilanthes austrotenuifolia H. Quirk & T.C. Chambers			W	E			c	d	Aus.
Dennstaedtiaceae									
Pteridium esculentum (G. Forster) Cockayne		D						d	W
Aspleniaceae									
Asplenium aethiopicum (Burm. f.) Bech.			W	E				d	Aus.
Asplenium obtusatum G. Forster			W				c		Aus.
Azollaceae									
Azolla filiculoides Lam.		D			a				W

GYMNOSPERMAE

Zamiaceae									
Macrozamia riedlei (Fisch. ex Gaudich.) C. Gardner	I	D	W					d	e
Cupressaceae									
Actinostrobus pyramidalis Miq.	I							d	e
Callitris preissii Miq.		D		E			c	d	Aus.

ANGIOSPERMAE - MONOCOTYLEDONS

Typhaceae									
Typha domingensis Pers.		D			a				W
* *Typha orientalis* C. Presl		D			a				
Potamogetonaceae									
Potamogeton drummondii Benth.		D			a				e
Potamogeton ochreatus Raoul		D			a				W
Potamogeton pectinatus L.		D			a				W
Potamogeton tricarinatus F. Muell. & A. Bennett ex A. Bennett		D			a				W
Ruppia maritima L.		D			a				W
Ruppia megacarpa R. Mason		D			a				W

Ruppia polycarpa R. Mason		D			a				W
Ruppia tuberosa J.L. Davis &Tomlinson		D			a				Aus.
Najadaceae									
Najas marina L.		D			a				W
Juncaginaceae									
Triglochin calcitrapa Hook.		D						d	Aus.
Triglochin centrocarpa Hook.		D	W					d	Aus.
Triglochin minutissima F. Muell.		D			a				Aus.
Triglochin mucronata R.Br.	I	D			a		c		Aus.
Triglochin procera R.Br.		D			a				W
Triglochin striata Ruiz & Pavon		D			a				W
Triglochin trichophora Nees ex Endl.	I	D		E	a			d	Aus.
Hydrocharitaceae									
Halophila ovalis (R.Br.) J.D. Hook.		D			a				W
Hydrilla verticillata (L.f.) Royle		D			a				W
Poaceae									
Agrostis avenacea Gmelin			W	E				d	W
* *Aira caryophyllea* L.		D	W	E			c	d	
* *Aira cupaniana* Guss.		D	W	E				d	
* *Aira praecox* L.			W			b			
* *Ammophila arenaria* (L.) Link		D	W			b			
Amphipogon turbinatus R.Br.		D		E				d	e
* *Avena barbata* Link	I	D	W	E		b		d	
* *Avena fatua* L.		D		E				d	
* *Briza maxima* L.		D	W		a			dl	
* *Briza minor* L.		D	W	E	a			d	
Bromus arenarius Labill.	I	D	W	E		b		d	W
* *Bromus diandrus* Roth	I	D	W	E		b		d	
* *Bromus hordeaceus* L.	I			E				dl	
* *Bromus rubens* L.		D						d	
* *Catapodium rigidum* (L.) C.E. Hubb. ex Dony		D		E				d	
Cynodon dactylon (L.) Pers.	I	D		E	a			dl	W
Danthonia caespitosa Gaudich.			W	E				dl	W
Danthonia racemosa R.Br.		D						d	W
Dichelachne crinita (L.f.) J.D. Hook.				E				d	W
* *Ehrharta brevifolia* Schrader	I	D				b		d	
* *Ehrharta calycina* Smith		D			a				
* *Ehrharta longiflora* Smith	I	D	W	E	a		c		
* *Ehrharta villosa* J.H. Schultes ex Schultes & Schultes		D				b			
Elymus scabrus (R.Br.) A. Love				E		b			W
Eragrostis dielsii Pilger ex Diels & Pritzel	I							dl	Aus.
Gastridium phleoides (Nees & Meyen) C.E. Hubb.		D			a				
* *Holcus lanatus* L.		D			a				
* *Hordeum geniculatum* All.		D			a				
* *Hordeum leporinum* Link	I	D	W	E				dl	
* *Hordeum vulgare* L.		D						d	
* *Lagurus ovatus* L.		D	W	E		b	c	d	
* *Lolium rigidum* Gaudin	I	D	W	E				d	
Neurachne alopecuroidea R.Br.				E				d	Aus.
* *Parapholis incurva* (L.) C.E. Hubb.		D		E	a			dl	
* *Paspalum dilatatum* Poiret		D			a				
* *Pentaschistis airoides* (Nees) Stapf		D						d	
* *Poa annua* L.	I	D	W					dl	
Poa drummondiana Nees		D						d	Aus.
Poa poiformis (Labill.) Druce	I	D	W	E		b		d	Aus.
Poa porphyroclados Nees				E		b			e
Poa serpentum Nees				E				d	e

* *Polypogon maritimus* Willd.		D	W		a				
* *Polypogon monspeliensis* (L.) Desf.		D		E	a			d	
Setaria dielsii Herrn.	I							dl	Aus.
Spinifex hirsutus Labill.		D	W	E		b			W
Spinifex longifolius R.Br.	I	D				b			Aus.
Sporobolus actinocladus (F. Muell.) F. Muell.		D			a				Aus.
Sporobolus virginicus (L.) Kunth	I	D	W	E	a		c		W
* *Stenotaphrum secundatum* (Walter) Kuntze		D						d	
Stipa acrociliata Reader				E				d	Aus.
Stipa compressa R.Br.		D						d	e
Stipa elegantissima Labill.	I	D						dl	Aus.
Stipa flavescens Labill.	I	D	W	E				d	Aus.
Stipa tenuiglumis Hughes				E		b			Aus.
Stipa variabilis Hughes		D						dl	Aus.
* *Trisetaria cristata* (L.) Kerguelen	I		W	E				d	
* *Triticum aestivum* L.			W					dl	
* *Vulpia bromoides* (L.) S.F. Gray				E				d	
* *Vulpia membranacea* (L.) Dumort.			W	E		b			
* *Vulpia myuros* (L.) C.C. Gmelin	I	D	W	E				dl	

Cyperaceae

Baumea arthrophylla (Nees) Boeckler		D			a				W
Baumea articulata (R.Br.) S.T. Blake		D			a				W
Baumea juncea (R.Br.) Palla		D			a				W
Baumea laxa (Nees) Boeckler		D			a				Aus.
Bulboschoenus caldwellii (V. Cook) Sojak		D			a				Aus.
Carex appressa R.Br.		D			a				W
Carex fascicularis Solander ex Boott		D			a				W
Carex preissii Nees	I		W	E			c	d	e
Caustis dioica R.Br.	I							d	e
Cyathochaeta avenacea Benth.				E				d	e
* *Cyperus tenellus* L.f.		D						d	
* *Cyperus tenuiflorus* Rottb.		D			a				
Gahnia drummondii (Steudel) K.L. Wilson				E			c		e
Gahnia lanigera (R.Br.) Benth.				E				d	Aus.
Gahnia trifida Labill.		D	W	E	a				Aus.
Isolepis cernua (M. Vahl) Roemer & Schultes		D	W	E	a			dl	W
Isolepis marginata (Thunb.) A. Dietr.		D		E	a		c		W
Isolepis nodosa (Rottb.) R.Br.	I	D	W	E	a	b	c		W
Lepidosperma angustatum R.Br.	I	D	W	E		b		d	e
Lepidosperma drummondii Benth.		D		E	a			d	e
Lepidosperma gladiatum Labill.	I	D	W	E	a	b	c	d	Aus.
Lepidosperma gracile R.Br.		D						d	e
Lepidosperma leptostachyum Benth.				E				d	e
Lepidosperma longitudinale Labill.		D			a				Aus.
Lepidosperma resinosum (Nees) Benth.		D						d	e
Lepidosperma squamatum Labill.		D	W					d	e
Lepidosperma striatum R.Br.	I							d	e
Lepidosperma viscidum R.Br.				E				d	Aus.
Mesomelaena stygia (R.Br.) Nees	I	D						d	e
Schoenoplectus praelongatus (Poiret) Raynal		D				b		d	e
Schoenoplectus validus (M. Vahl) A. & D. Love		D			a				Aus.
Schoenus andrewsii W. Fitzg.		D			a				e
Schoenus grandiflorus (Nees) F. Muell.	I	D						d	e
Schoenus indutus (F. Muell.) Benth.		D			a				e
Schoenus lanatus Labill.				E				d	e
Schoenus nitens (R.Br.) Poiret		D		E				d	W
Schoenus pleiostemoneus F. Muell.	I			E				d	e
Schoenus rodwayanus W. Fitzg.		D			a				e
Schoenus subfascicularis Kuek.		D			a				e
Schoenus subflavus Kuek.	I							d	e
Schoenus trachycarpus F. Muell.		D						d	e
Schoenus unispiculatus F. Muell. ex Benth.		D			a				e
Tetraria octandra (Nees) Kuek.		D						d	e

Araceae								
* *Zantedeschia aethiopica* (L.) Sprengel			W				d	
Lemnaceae								
Lemna disperma Hegelm.		D			a			W
Spirodela punctata (G. Meyer) Thompson		D			a			W
Restionaceae								
Anarthria scabra R.Br.				E			d	e
Anarthria prolifera R.Br.				E			d	e
Ecdeiocolea monostachya F. Muell.	I						d	e
Empodisma gracillimum (F. Muell) L. Johnson & Cutler		D					dI	e
Hypolaena exsulca R.Br.		D					d	e
Lepidobolus chaetocephalus F. Muell.	I						d	e
Leptocarpus aristatus R.Br.		D			a			e
Leptocarpus tenax (Labill.) R.Br.			W				d	Aus.
Lepyrodia muirii F. Muell.		D			a			e
Loxocarya cinerea R.Br.	I	D	W				d	e
Loxocarya flexuosa (R.Br.) Benth.		D	W	E			dl	e
Lyginia barbata R.Br.		D			a		d	e
Restio sphacelatus R.Br.	I						d	e
Centrolepidaceae								
Centrolepis cephaloformis Reader				E	a			Aus.
Centrolepis drummondiana (Nees) Walp.		D					d	Aus.
Centrolepis glabra (F. Muell. ex Sonder) Hieron.				E	a			Aus.
Centrolepis polygyna (R.Br.) Hieron.			W	E	a			Aus.
Centrolepis strigosa (R.Br.) Roemer & Schultes			W	E	a			W
Juncaceae								
* *Juncus bufonius* L.		D	W	E	a			
* *Juncus capitatus* Weigel		D			a			
Juncus kraussii Hochst.		D	W	E	a			W
Juncus pallidus R.Br.		D	W	E	a	c		W
Juncus planifolius R.Br.		D			a			W
Luzula meridionalis Nordensk.		D					d	Aus.
Asparagaceae								
* *Asparagus asparagoides* (L.) W. Wight		D					d	
Dasypogonaceae								
Acanthocarpus preissii Lehm.	I	D	W				dl	e
Calectasia cyanea R.Br.	I						d	Aus.
Dasypogon bromeliifolius R.Br.			W	E			d	e
Kingia australis R.Br.			W	E		c		e
Lomandra hastilis (R.Br.) Ewart	I						d	e
Lomandra nigricans T.D. Macfarlane		D					d	e
Lomandra rigida Labill.				E		c		e
Lomandra sericea (Endl.) Ewart		D					d	e
Lomandra suaveolens (Endl.) Ewart		D	W				d	e
Xanthorrhoeaceae								
Xanthorrhoea drummondii Harvey	I						d	e
Xanthorrhoea platyphylla D.J. Bedford				E		c		e
Xanthorrhoea preissii Endl.		D	W		a		d	e
Phormiaceae								
Dianella revoluta R.Br.	I	D	W	E			dl	Aus.
Stypandra glauca R.Br.		D		E		c	d	e
Stypandra grandiflora Lindley			W			c	d	e
Anthericaceae								
Agrostocrinum scabrum (R.Br.) Baillon				E			d	e

Borya nitida Labill.			W	E			c		e
Caesia micrantha Lindley and/or *C. occidentalis* R.Br.		D						d	Aus.
Chamaescilla corymbosa (R.Br.) F. Muell.		D	W	E			c		Aus.
Corynotheca micrantha (Lindley) Macbride		D						d	e
Dichopogon capillipes (Endl.) N.H. Brittan		D						d	e
Dichopogon preissii (Endl.) N.H. Brittan		D						d	e
Laxmannia sessiliflora Decne.	I							d	Aus.
Laxmannia squarrosa Lindley		D	W					d	e
Sowerbaea laxiflora Lindley	I	D						d	e
Thysanotus arenarius N.H. Brittan	I							d	e
Thysanotus asper Lindley		D						d	e
Thysanotus dichotomus (Labill.) Druce		D		E				d	e
Thysanotus multiflorus R.Br.		D						d	e
Thysanotus patersonii R.Br.	I	D		E				dl	Aus.
Thysanotus sparteus R.Br.	I	D						d	e
Thysanotus thyrsoideus Baker	I							d	e
Thysanotus triandrus (Labill.) R.Br.	I	D						d	e
Tricoryne elatior R.Br.	I	D	W	E				d	Aus.
Tricoryne humilis Endl.	I							d	e
Asphodelaceae									
* *Asphodelus fistulosus* L.		D				b		d	
Bulbine semibarbata (R.Br.) Haw.	I	D	W	E				dl	Aus.
* *Trachyandra divaricata* (Jacq.) Kunth		D	W			b		d	
Colchicaceae									
Burchardia multiflora Lindley	I							d	e
Burchardia umbellata R.Br.		D						d	Aus.
Wurmbea dioica (R.Br.) F. Muell.	I	D						d	Aus.
Haemodoraceae									
Anigozanthos flavidus Redouté & DC.			W	E				d	e
Anigozanthos humilis Lindley		D						d	e
Anigozanthos manglesii D. Don	I	D						d	e
Anigozanthos rufus Labill.				E				d	e
Conostylis aculeata R.Br.	I	D	W					d	e
Conostylis candicans Endl.		D						d	e
Conostylis prolifera Benth.	I							d	e
Conostylis seorsiflora F. Muell.				E				d	e
Conostylis setigera R.Br.		D						d	e
Haemodorum laxum R.Br.		D						d	e
Haemodorum paniculatum Lindley		D						d	e
Haemodorum spicatum R.Br.		D						d	e
Phlebocarya ciliata R.Br.		D						d	e
Dioscoreaceae									
Dioscorea hastifolia Endl.	I							d	e
Iridaceae									
* *Chasmanthe floribunda* (Salisb.) N.E. Brown		D						d	
* *Freesia leichtlinii* Klatt		D						d	
* *Gladiolus floribundus* Jacq.			W					d	
* *Homeria flaccida* Sweet		D						d	
* *Homeria miniata* (Andrews) Sweet		D						d	
Orthrosanthus laxus (Endl.) Benth.	I	D						d	e
Patersonia inaequalis Benth.				E				d	e
Patersonia occidentalis R.Br.	I	D	W		a			d	Aus.
Patersonia umbrosa Endl.		D						d	e
* *Romulea rosea* (L.) Ecklon		D	W					d	
* *Sparaxis grandiflora* (Delaroche) Ker-Gawler		D						d	

Orchidaceae								
Acianthus reniformis (R.Br.) Schltr.	I	D					d	W
Caladenia crebra A.S. George	I						d	e
Caladenia deformis R.Br.		D					d	Aus.
Caladenia filamentosa R.Br.		D					d	Aus.
Caladenia flava R.Br.	I	D		E			d	e
Caladenia gemmata Lindley		D					d	e
Caladenia hirta Lindley		D					d	e
Caladenia huegelii H.G. Reichb.		D					d	e
Caladenia latifolia R.Br.	I	D	W	E			dl	Aus.
Caladenia longicauda Lindley		D					d	e
Caladenia menziesii R.Br.	I	D					d	Aus.
Caladenia sericea Lindley		D					d	e
Cryptostylis ovata R.Br.			W				d	e
Diuris longifolia R.Br.		D		E			d	Aus.
Diuris pauciflora R.Br.		D			a			e
Elythranthera emarginata (Lindley) A.S. George		D					d	e
Eriochilus dilatatus Lindley	I	D					d	e
Eriochilus scaber Lindley		D					d	e
Lyperanthus nigricans R.Br.		D	W	E			d	Aus.
Microtis alba R.Br.				E			d	e
Microtis rara R.Br.		D					d	Aus.
Microtis unifolia (G. Forster) H.G. Reichb.		D		E			d	W
Prasophyllum hians H.G. Reichb.		D					d	e
Prasophyllum parvifolium Lindley		D					d	e
Pterostylis nana R.Br.			W	E			d	W
Pterostylis scabra Lindley	I	D					d	Aus.
Pterostylis vittata Lindley	I	D	W			c	d	Aus.
Thelymitra fuscolutea R.Br.		D		E			d	Aus.
Thelymitra nuda R.Br.				E			d	Aus.
Thelymitra pauciflora R.Br.		D			a			W
Thelymitra variegata (Lindley) F. Muell.	I						d	e

ANGIOSPERMAE - DICOTYLEDONS

Casuarinaceae								
Casuarina fraseriana Miq.		D	W				d	e
Casuarina helmsii Ewart & Gordon				E			d	Aus.
Casuarina huegeliana Miq.			W	E		c	d	e
Casuarina humilis Otto & Dietr.	I	D	W	E			d	e
Casuarina lehmanniana Miq.	I						d	e
Casuarina obesa Miq.	I	D			a			Aus.
Casuarina trichodon Miq.				E			d	e
Urticaceae								
Parietaria debilis G. Forster	I	D	W	E			dl	W
* *Urtica urens* L.		D	W	E			d	
Proteaceae								
Adenanthos cuneatus Labill.			W	E			d	e
Adenanthos forrestii F. Muell.				E		c	d	e
Adenanthos sericeus Labill.			W	E			d	e
Banksia attenuata R.Br.	I	D					d	e
Banksia dryandroides Baxter ex Sweet				E		c		e
Banksia grandis Willd.		D	W				d	e
Banksia hookeriana Meissner	I						d	e
Banksia ilicifolia R.Br.		D	W				d	e
Banksia leptophylla A.S. George	I						d	e
Banksia littoralis R.Br.		D	W		a			e
Banksia media R.Br.				E		c	d	e
Banksia menziesii R.Br.	I	D					d	e
Banksia occidentalis R.Br.				E	a			e
Banksia praemorsa Andrews				E		c		e
Banksia prionotes Lindley	I	D					d	e

Banksia pulchella R.Br.				E		d	e
Banksia speciosa R.Br.				E		d	e
Banksia sphaerocarpa R.Br.		D				d	e
Banksia victoriae Meissner	I					d	e
Conospermum caeruleum R.Br.				E		d	e
Conospermum stoechadis Endl.	I	D				dl	e
Conospermum triplinervium R.Br.	I	D				d	e
Dryandra formosa R.Br.			W			d	e
Dryandra longifolia R.Br.				E		d	e
Dryandra nivea (Labill.) R.Br.	I	D				dl	e
Dryandra obtusa R.Br.				E		d	e
Dryandra pteridifolia R.Br.				E	c		e
Dryandra sessilis (Knight) Domin	I	D	W	E		d	e
Grevillea argyrophylla Meissner	I				c		e
Grevillea candelabroides C. Gardner	I					d	e
Grevillea concinna R.Br.				E		d	e
Grevillea crithmifolia R.Br.		D				dl	e
Grevillea eriostachya Lindley	I					d	Aus.
Grevillea integrifolia (Endl.) Meissner	I					d	e
Grevillea leucopteris Meissner	I					d	e
Grevillea macrostylis F. Muell.				E		d	e
Grevillea oligantha F. Muell.	I			E		d	e
Grevillea oncogyne Diels				E		d	e
Grevillea pilulifera (Lindley) Druce	I	D				d	e
Grevillea polybotrya Meissner	I					d	e
Grevillea sparsiflora F. Muell.				E	c	d	e
Grevillea stenomera F. Muell.	I					d	e
Grevillea thelemanniana Huegel ex Endl.	I	D		E		dl	e
Grevillea tridentifera (Endl.) Meissner	I					d	e
Grevillea vestita (Endl.) Meissner		D				d	e
Hakea cinerea R.Br.				E		d	e
Hakea clavata Labill.				E	c		e
Hakea corymbosa R.Br.	I			E		d	e
Hakea costata Meissner	I	D	W			d	e
Hakea elliptica (Smith) R.Br.			W	E		d	e
Hakea incrassata R.Br.	I					d	e
Hakea lissocarpha R.Br.	I	D				d	e
Hakea marginata R.Br.		D		E	c	d	e
Hakea nitida R.Br.			W	E		d	e
Hakea oleifolia (Smith) R.Br.			W	E	c	d	e
Hakea prostrata R.Br.	I	D	W	E	c	d	e
Hakea ruscifolia Labill.	I	D				d	e
Hakea stenophylla Cunn. ex R.Br.	I					d	e
Hakea suaveolens R.Br.			W	E		d	e
Hakea trifurcata (Smith) R.Br.	I	D				d	e
Isopogon buxifolius R.Br.				E	c		e
Isopogon formosus R.Br.				E	c		e
Isopogon trilobus R.Br.				E		d	e
Persoonia longifolia R.Br.			W			d	e
Persoonia saccata R.Br.		D				d	e
Petrophile drummondii Meissner	I					d	e
Petrophile linearis R.Br.		D				d	e
Petrophile longifolia R.Br.		D				d	e
Petrophile macrostachya R.Br.	I	D				d	e
Petrophile serruriae R.Br.		D				d	e
Petrophile striata R.Br.	I					d	e
Petrophile teretifolia R.Br.				E		d	e
Petrophile trifida R.Br.		D				d	e
Stirlingia latifolia (R.Br.) Steudel		D				d	e
Stirlingia tenuifolia (R.Br.) Steudel				E		d	e
Synaphea polymorpha R.Br.	I	D				d	e
Synaphea spinulosa (Burm. f.) Merr.		D				d	e
Xylomelum occidentale R.Br.		D				d	e

Santalaceae									
Exocarpos aphyllus R.Br.	I							dl	Aus.
Exocarpos sparteus R.Br.	I	D	W	E		b		d	Aus.
Leptomeria cunninghamii Miq.		D		E				d	e
Leptomeria pauciflora R.Br.				E				d	e
Leptomeria preissiana (Miq.) A.DC.		D	W					d	Aus.
Leptomeria spinosa (Miq.) A.DC.		D						d	e
Santalum acuminatum (R.Br.) A.DC.	I	D						dl	Aus.
Olacaceae									
Olax benthamiana Miq.		D						dl	e
Olax phyllanthi (Labill.) R.Br.		D	W					d	e
Loranthaceae									
Amyema miquelii (Lehm. ex Miq.) Tieghem		D						d	Aus.
Amyema miraculosum (Miq.) Tieghem		D		E				d	Aus.
Amyema preissii (Miq.) Tieghem	I							d	Aus.
Nuytsia floribunda (Labill.) R.Br. ex Fenzl	I	D		E				d	e
Polygonaceae									
* *Emex australis* Steinh.	I	D						dl	
Muehlenbeckia adpressa (Labill.) Meissner	I	D	W	E			c	d	Aus.
* *Rumex brownii* Campdera			W					d	
* *Rumex crispus* L.			W	E		b		d	
* *Rumex pulcher* L.		D						d	
Chenopodiaceae									
Atriplex cinerea Poiret	I	D	W	E	a	b	c		Aus.
Atriplex isatidea Moq.	I	D	W			b			e
Atriplex paludosa R.Br.	I	D	W	E	a		c	d	Aus.
* *Atriplex prostrata* M. Boucher ex DC.		D	W	E	a		c		
* *Chenopodium album* L.		D			a				
* *Chenopodium glaucum* L.		D						dl	
* *Chenopodium murale* L.	I	D	W	E				dl	
Chenopodium pumilio R.Br.				E				d	Aus.
Enchylaena tomentosa R.Br.	I	D		E		b	c		Aus.
Halosarcia halocnemoides (Nees) Paul G. Wilson	I	D		E	a		c		Aus.
Halosarcia indica (Willd.) Paul G. Wilson	I	D			a				W
Halosarcia lepidosperma Paul G. Wilson		D			a				Aus.
Halosarcia pergranulata (J. Black) Paul G. Wilson		D			a				Aus.
Maireana erioclada (Benth.) Paul G. Wilson				E			c		Aus.
Maireana oppositifolia (F. Muell.) Paul G. Wilson			W	E			c		Aus.
Rhagodia baccata (Labill.) Moq.	I	D	W	E		b	c	d	Aus.
Rhagodia crassifolia R.Br.			W	E		b	c		Aus.
Rhagodia preissii Moq.	I	D		E	a			d	Aus.
Salsola kali L.	I	D				b			Aus.
Sarcocornia blackiana (Ulbr.) A.J. Scott	I	D	W	E	a		c		Aus.
Sarcocornia quinqueflora (Bunge ex Ung.-Sternb.) A.J. Scott	I	D	W	E	a		c		Aus.
Suaeda australis (R.Br.) Moq.	I	D	W	E	a	b			Aus.
Threlkeldia diffusa R.Br.	I	D	W	E	a	b	c	d	Aus.
Amaranthaceae									
Hemichroa pentandra R.Br.		D			a				Aus.
Ptilotus drummondii (Moq.) F. Muell.		D						d	e
Ptilotus grandiflorus F. Muell.	I							d	e
Ptilotus polystachyus (Gaudich.) F. Muell.		D						d	Aus.
Ptilotus stirlingii (Lindley) F. Muell.		D						d	e
Ptilotus villosiflorus F. Muell.	I							d	e
Gyrostemonaceae									
Gyrostemon brownii S. Moore				E				d	e

Gyrostemon ramulosus Desf.	I	D						d	Aus.
Gyrostemon sheathii W. Fitzg.				E				d	e
Tersonia cyathiflora (Fenzl) A.S. George	I	D						dl	e
Phytolaccaceae									
* *Phytolacca octandra* L.			W					d	
Aizoaceae									
* *Carpobrotus aequilaterus* (Haw.) N.E. Brown	I	D	W	E		b	c	d	
* *Carpobrotus edulis* (L.) L. Bolus		D						d	
Carpobrotus virescens (Haw.) Schwantes	I	D	W	E		b	c	d	e
Disphyma crassifolium (L.) L. Bolus	I		W	E		b	c		Aus.
* *Mesembryanthemum crystallinum* L.	I	D					c		
* *Tetragonia decumbens* Miller	I	D	W			b		d	
Tetragonia implexicoma (Miq.) J.D. Hook.	I	D	W	E		b	c	d	Aus.
Tetragonia tetragonoides (Pallas) Kuntze			W				c		Aus.
Portulacaceae									
Calandrinia brevipedata F. Muell.		D				b		d	Aus.
Calandrinia calyptrata J.D. Hook.	I	D	W	E			c		Aus.
Calandrinia corrigioloides F. Muell. ex Benth.		D						d	Aus.
Calandrinia eremaea Ewart		D						d	Aus.
Calandrinia granulifera Benth.				E	a				Aus.
Calandrinia liniflora Fenzl		D						dl	e
Caryophyllaceae									
* *Cerastium glomeratum* Thuill.		D	W	E	a			dl	
* *Petrorhagia velutina* (Guss.) P. Ball & Heyw.		D		E				dl	
* *Polycarpon tetraphyllum* (L.) L.	I	D	W	E			c		
* *Sagina apetala* Ard.		D	W					d	
* *Silene gallica* L.		D		E				dl	
* *Silene nocturna* L.		D		E			c	d	
* *Spergularia rubra* (L.) J.S. Presl	I	D		E				dl	
* *Stellaria media* (L.) Villars		D	W	E				d	
Ranunculaceae									
Clematis microphylla DC.	I	D	W	E		b		d	Aus.
Clematis pubescens Huegel ex Endl.	I		W	E			c	d	e
Ranunculus colonorum Endl.		D						d	e
Ranunculus sessiliflorus R.Br. ex DC.		D						d	Aus.
Lauraceae									
Cassytha aurea J.Z. Weber		D	W					d	e
Cassytha flava Nees		D						d	e
Cassytha glabella R.Br.		D						dl	Aus.
Cassytha melantha R.Br.				E				d	Aus.
Cassytha pomiformis Nees				E				d	e
Cassytha racemosa Nees	I	D	W		a			dl	e
Papaveraceae									
* *Argemone ochroleuca* Sweet		D						d	
Fumariaceae									
* *Fumaria muralis* Sonder ex Koch		D	W					d	
Capparaceae									
Capparis spinosa L.	I							d	W
Brassicaceae									
* *Alyssum linifolium* Stephan ex Willd.		D						d	
* *Brassica rapa* L.	I							dl	
* *Brassica tournefortii* Gouan		D						dl	
* *Cakile edentula* (Bigelow) Hook.		D				b			

* *Cakile maritima* Scop.	I	D	W	E		b			
* *Capsella bursa-pastoris* (L.) Medikus		D						d	
* *Diplotaxis muralis* (L.) DC.		D						d	
* *Diplotaxis tenuifolia* (L.) DC.		D						d	
* *Heliophila pusilla* L.f.		D						dl	
* *Hymenolobus procumbens* (L.) Nutt. ex Schinz & Thell.	I	D	W	E			c		
Lepidium foliosum Desvaux	I	D	W	E			c	d	Aus.
Lepidium linifolium (Desf.) Steudel	I							dl	e
Lepidium pseudoruderale Thell.	I	D						d	Aus.
* *Raphanus raphanistrum* L.	I	D	W					dl	
* *Rapistrum rugosum* (L.) All.		D						d	
* *Rorippa nasturtium-aquaticum* (L.) Hayek		D			a				
* *Sinapis arvensis* L.		D						d	
* *Sisymbrium irio* L.		D						dl	
* *Sisymbrium orientale* L.	I	D	W					dl	
Stenopetalum filifolium Benth.		D						dl	e
Stenopetalum robustum Endl.		D						d	e
Droseraceae									
Drosera bulbosa Hook.		D						d	e
Drosera erythrorhiza Lindley	I	D						d	e
Drosera glanduligera Lehm.				E				d	Aus.
Drosera macrantha Endl.	I	D		E				d	Aus.
Drosera macrophylla Lindley		D						d	e
Drosera menziesii R.Br.	I							d	e
Drosera pallida Lindley	I	D	W					d	e
Drosera stolonifera Endl.	I	D						d	e
Crassulaceae									
Crassula colorata (Nees) Ostenf.	I	D		E			c	d	W
* *Crassula decumbens* Thunb.			W	E			c		
* *Crassula glomerata* P. Bergius		D				b		d	
* *Crassula natans* Thunb.				E	a				
Crassula pedicellosa (F. Muell.) Ostenf.		D						dl	Aus.
Crassula peduncularis (Smith) Meigen				E	a				Aus.
Pittosporaceae									
Billardiera coriacea Benth.	I							d	e
Billardiera floribunda (Putterl.) F. Muell.	I							d	e
Billardiera variifolia DC.		D						d	e
Pittosporum phylliraeoides DC.	I	D						dl	Aus.
Sollya heterophylla Lindley		D	W	E			c	d	e
Surianaceae									
Stylobasium spathulatum Desf.	I							d	Aus.
Mimosaceae									
Acacia acuminata Benth.				E				d	e
Acacia adnata F. Muell.	I							d	e
Acacia alata R.Br.		D		E				d	e
Acacia anceps DC.				E				d	Aus.
Acacia blakelyi Maiden	I							d	e
Acacia browniana H.L. Wendl.				E				d	e
Acacia cochlearis (Labill.) H.L. Wendl.		D		E				dl	e
Acacia crassiuscula Wendl.				E				d	e
Acacia cyclops Cunn. ex Don	I	D	W	E		b		d	Aus.
Acacia erinacea Benth.				E				d	Aus.
Acacia gonophylla Benth.				E				d	e
Acacia heteroclita Meissner		D		E				d	e
Acacia huegelii Benth.		D						d	e
Acacia idiomorpha Cunn. ex Benth.	I							d	e
Acacia lasiocarpa Benth.	I	D						dl	e

Acacia latipes Benth.	I						d	e
Acacia leioderma Maslin				E			d	e
Acacia ligulata Cunn. ex Benth.	I						d	Aus.
Acacia littorea Maslin		D	W		b		d	e
Acacia myrtifolia (Smith) Willd.				E			d	Aus.
Acacia nigricans (Labill.) R.Br.				E			d	e
Acacia nitidula Benth.				E			d	e
Acacia pulchella R.Br.		D	W				dl	e
Acacia rostellifera Benth.	I	D	W				dl	e
Acacia saligna (Labill.) H. Wendl.	I	D					dl	Aus.
Acacia scirpifolia Meissner	I						d	e
Acacia spathulifolia Maslin	I	D					d	e
Acacia stenoptera Benth.		D					d	e
Acacia subcaerulea Lindley				E			d	e
Acacia truncata (Burm. f.) Hort. ex Hoffsgg.		D	W	E			dl	e
Acacia xanthina Benth.	I	D					d	e
Acacia willdenowiana H. Wendl.		D					d	e
Paraserianthes lophantha (Willd.) I. Nielsen			W	E			d	W
Caesalpiniaceae								
Cassia nemophila Cunn. ex Vogel				E			d	Aus.
Labichea cassioides Gaudich.	I						d	e
Labichea lanceolata Benth.				E			d	e
Papilionaceae								
Bossiaea dentata (R.Br.) Benth.				E			dl	e
Bossiaea eriocarpa Benth.	I	D					d	e
Bossiaea rufa R.Br.			W	E		c	d	e
Bossiaea walkeri F. Muell.	I						d	Aus.
Burtonia conferta DC.		D					d	e
Chorizema aciculare (DC.) C. Gardner				E			d	e
Chorizema ilicifolium Labill.				E			d	e
Dillwynia pungens (Sweet) Mackay				E		c		e
Daviesia divaricata Benth.	I	D					d	e
Daviesia gracilis M.D. Crisp		D					d	e
Daviesia incrassata Smith		D					d	e
Daviesia nudiflora Meissner	I						d	e
Daviesia pedunculata Benth.	I						d	e
Daviesia preissii Meissner				E			d	e
Daviesia quadrilatera Benth.	I						d	e
Eutaxia obovata (Labill.) C. Gardner			W	E		c		e
Gastrolobium bilobum R.Br.			W	E			d	e
Gompholobium aristatum Benth.		D					d	e
Gompholobium knightianum Lindley				E			d	e
Gompholobium polymorphum R.Br.		D					d	e
Gompholobium tomentosum Labill.	I	D					dl	e
Hardenbergia comptoniana (Andrews) Benth.	I	D	W				dl	e
Hovea pungens Benth.		D					d	e
Hovea stricta Meissner	I						d	e
Hovea trisperma Benth.		D					d	e
Isotropis cuneifolia (Smith) Benth. ex B.D. Jackson	I	D					d	e
Jacksonia cupulifera Meissner	I						d	e
Jacksonia furcellata (Bonpl.) DC.		D		E	b		d	e
Jacksonia hakeoides Meissner		D					d	e
Jacksonia horrida DC.		D	W	E			d	e
Jacksonia sericea Benth.		D					d	e
Jacksonia spinosa (Labill.) R.Br.			W	E			d	e
Jacksonia sternbergiana Huegel		D					d	e
Jacksonia ulicina Meissner	I						d	e
Kennedia coccinea Vent.		D	W	E		c	d	e
Kennedia nigricans Lindley				E			d	e
Kennedia prostrata R.Br.	I	D	W				dl	Aus.

* *Lotus suaveolens* Pers.			W					d	
* *Lupinus cosentinii* Guss.		D						d	
* *Lupinus luteus* L.		D						d	
* *Medicago polymorpha* L.	I	D	W	E				dl	
* *Melilotus indica* (L.) All.	I	D		E				dl	
Mirbelia spinosa Benth.	I							d	e
Oxylobium capitatum Benth.	I	D						d	e
Oxylobium drummondii Meissner				E			c		e
Oxylobium lanceolatum (Vent.) Druce		D	W					d	e
Oxylobium racemosum (Turcz.) C. Gardner		D						d	e
Oxylobium reticulatum Meissner	I	D						dl	e
* *Psoralea pinnata* L.		D			a				
Pultenaea obcordata (R.Br.) Benth.				E				d	e
Sphaerolobium daviesioides Turcz.				E				d	Aus.
Sphaerolobium medium R.Br.		D						d	e
Sphaerolobium vimineum Smith	I							d	Aus.
Templetonia retusa (Vent.) R.Br.	I	D	W	E			c	d	Aus.
* *Trifolium angustifolium* L.		D						d	
* *Trifolium campestre* Schreber		D						d	
* *Trifolium fragiferum* L.		D						d	
* *Trifolium glomeratum* L.				E			c		
* *Trifolium scabrum* L.		D						d	
* *Trifolium tomentosum* L.		D						d	
* *Vicia sativa* L.		D						d	
Viminaria juncea (Schrader & Wendl.) Hoffsgg.		D			a				Aus.
Geraniaceae									
* *Erodium botrys* (Cav.) Bertol.		D						d	
* *Erodium cicutarium* (L.) L'Her.	I	D	W	E				d	
* *Geranium molle* L.		D	W	E	a		c	d	
Geranium solanderi Carolin		D		E				d	W
Pelargonium australe Willd.	I	D	W	E		b	c		Aus.
* *Pelargonium capitatum* (L.) L'Her.		D	W					dl	
Pelargonium littorale Huegel		D		E		b		d	Aus.
Oxalidaceae									
Oxalis corniculata L.	I	D	W	E				dl	W
* *Oxalis pes-caprae* L.		D	W					d	
Tropaeolaceae									
* *Tropaeolum majus* L.			W					d	
Linaceae									
Linum marginale Cunn. ex Planchon		D			a				Aus.
Zygophyllaceae									
Nitraria billardierei DC.	I	D	W	E		b	c		Aus.
Zygophyllum apiculatum F. Muell.	I	D		E		b		d	Aus.
Zygophyllum aurantiacum (Lindley) F. Muell.		D				b			Aus.
Zygophyllum billardierei DC.	I			E			c	d	Aus.
Zygophyllum fruticulosum DC.		D				b		d	e
Rutaceae									
Boronia alata Smith		D	W	E			c	d	e
Boronia albiflora R.Br. ex Benth.				E				dl	e
Boronia crassifolia Benth.				E				d	e
Boronia crenulata Smith				E				d	e
Boronia ramosa (Lindley) Benth.	I							d	e
Boronia scabra Lindley				E				d	e
Chorilaena quercifolia Endl.			W	E			c		e
Correa reflexa (Labill.) Vent.				E			c		Aus.
Diplolaena dampieri Desf.	I	D	W			b	c	d	e
Diplolaena grandiflora Desf.	I							d	e

Diplolaena microcephala Bartling	I	D						d	e
Eriostemon nodiflorus Lindley		D						d	e
Eriostemon spicatus A. Rich.		D						d	e
Geleznowia verrucosa Turcz.	I							d	e
Phebalium anceps DC.		D		E	a			d	e
Phebalium euphemiae F. Muell.) C. Gardner				E				d	e
Phebalium filifolium Turcz.	I							d	e
Phebalium rude Bartling				E				d	e
Tremandraceae									
Tetratheca hirsuta Lindley		D						d	e
Polygalaceae									
Comesperma calymega Labill.	I	D						d	Aus.
Comesperma confertum Labill.	I	D		E			c		e
Comesperma integerrimum Endl.		D						d	Aus.
Comesperma polygaloides F. Muell.				E				d	Aus.
Comesperma virgatum Labill.		D			a				e
Comesperma volubile Labill.				E				d	Aus.
Euphorbiaceae									
Adriana quadripartita (Labill.) Gaudich.	I	D		E				d	Aus.
Beyeria lechenaultii (DC.) Baillon				E				d	Aus.
Beyeria viscosa (Labill.) Miq.	I	D		E			c	d	Aus.
* *Euphorbia helioscopia* L.		D						d	
* *Euphorbia paralias* L.			W	E			c		
* *Euphorbia peplus* L.		D		E				d	
Euphorbia tannensis Sprengel	I							dl	W
* *Euphorbia terracina* L.	I	D						dl	
Phyllanthus calycinus Labill.	I	D	W	E			c	d	Aus.
Phyllanthus scaber Klotzsch				E				d	e
Poranthera microphylla Brongn.		D		E				d	Aus.
Ricinocarpos glaucus Endl.	I	D						d	e
* *Ricinus communis* L.		D						d	
Callitrichaceae									
* *Callitriche stagnalis* Scop.		D			a				
Stackhousiaceae									
Stackhousia dielsii Pampan.	I							d	e
Stackhousia monogyna Labill.		D		E				d	e
Stackhousia muricata Lindley	I							d	W
Stackhousia scoparia Benth.				E				d	e
Tripterococcus brunonis Endl.		D						d	e
Sapindaceae									
Diplopeltis huegelii Endl.		D						d	e
Dodonaea amblyophylla Diels				E			c		e
Dodonaea aptera Miq.		D	W			b		d	e
Dodonaea ceratocarpa Endl.			W	E				dl	e
Dodonaea stenozyga F. Muell.				E				d	Aus.
Dodonaea viscosa Jacq.				E			c		W
Heterodendrum oleifolium Desf.	I							d	Aus.
Rhamnaceae									
Cryptandra arbutiflora Fenzl		D						d	e
Cryptandra leucophracta Schldl.				E				d	Aus.
Cryptandra mutila Nees ex Reissek	I	D						d	e
Cryptandra nutans Steudel				E				d	e
Cryptandra pungens Steudel	I							d	e
Pomaderris myrtilloides Fenzl				E				d	Aus.
Pomaderris oraria F. Muell. ex Reissek				E			c	d	Aus.
Spyridium denticuliferum Diels				E				d	e

Spyridium globulosum (Labill.) Benth.	I	D	W	E		b	c	d	e
Spyridium spadiceum (Fenzl) Benth.				E				d	e
Spyridium tridentatum (Steudel) Benth.	I			E				d	Aus.
Trymalium floribundum Steudel				E				d	e
Trymalium ledifolium Fenzl	I	D						d	e
Trymalium myrtillus S. Moore				E			c		e
Malvaceae									
Alyogyne cuneiformis (DC.) Lewton	I							d	e
Alyogyne hakeifolia (Giord.) Alef.	I			E				d	Aus.
Alyogyne huegelii (Endl.) Fryx.	I	D		E				d	Aus.
* *Lavatera arborea* L.		D	W					d	
Lavatera plebeia Sims	I	D	W	E			c		Aus.
Lawrencia glomerata Hook.	I	D		E	a				Aus.
Lawrencia spicata Hook.	I	D	W	E	a				Aus.
Lawrencia viridigrisea N.S. Lander	I				a				Aus.
* *Malva parviflora* L.	I	D	W	E			c	d	
Sida hookeriana Miq.				E				d	e
Sterculiaceae									
Guichenotia ledifolia Gay		D		E				d	e
Keraudrenia hermanniifolia Gay	I							d	e
Lasiopetalum discolor Hook.				E				d	Aus.
Lasiopetalum floribundum Benth.		D						d	e
Lasiopetalum indutum Steudel				E				d	e
Lasiopetalum membranaceum (Steudel) Benth.		D						d	e
Lasiopetalum oppositifolium F. Muell.	I	D						d	e
Lasiopetalum quinquenervium Turcz.				E				d	e
Rulingia craurophylla F. Muell.	I							d	Aus.
Rulingia cygnorum (Steudel) C. Gardner				E				d	e
Rulingia grandiflora Endl.				E				d	e
Thomasia cognata Steudel		D						d	e
Thomasia discolor Steudel				E				d	e
Thomasia macrocalyx Steudel	I							d	e
Thomasia solanacea Gay				E				d	e
Thomasia triphylla (Labill.) Gay		D	W					d	e
Dilleniaceae									
Hibbertia conspicua (J. Drumm. ex Harvey) Gilg	I							d	e
Hibbertia crassifolia (Turcz.) Benth.	I							d	e
Hibbertia cuneiformis (Labill.) Smith			W	E		b	c	d	e
Hibbertia cunninghamii W.T. Aiton ex Hook.			W					d	e
Hibbertia grossulariifolia (Salisb.) Salisb.				E				d	e
Hibbertia huegelii (Endl.) F. Muell.		D						d	e
Hibbertia hypericoides (DC.) Benth.	I	D						d	e
Hibbertia nutans Benth.				E				d	e
Hibbertia polystachya Benth.	I	D						d	e
Hibbertia pungens Benth.				E				d	e
Hibbertia racemosa (Endl.) Gilg	I	D	W	E				dl	e
Hibbertia spicata F. Muell.		D						d	e
Hibbertia subvaginata (Steudel) F. Muell.		D						d	e
Frankeniaceae									
Frankenia pauciflora DC.	I	D			a		c		Aus.
Frankenia tetrapetala Labill.				E			c		e
Violaceae									
Hybanthus calycinus (DC. ex Ging.) F. Muell.	I	D						d	e
Thymelaeaceae									
Pimelea angustifolia R.Br.	I			E				d	e
Pimelea argentea R.Br.	I	D		E				d	e
Pimelea clavata Labill.			W	E				d	e

Pimelea ferruginea Labill.		D	W	E		c	d	e
Pimelea floribunda Meissner	I					c	d	e
Pimelea imbricata R.Br.	I						d	e
Pimelea microcephala R.Br.	I	D					dl	Aus.
Pimelea rosea R.Br.	I	D	W	E		c	d	e
Pimelea serpyllifolia R.Br.				E			d	Aus.
Pimelea spectabilis Lindley	I	D					d	e
Pimelea suaveolens (Endl.) Meissner		D					d	e
Pimelea sylvestris R.Br.		D					d	e
Myrtaceae								
Agonis flexuosa (Sprengel) Schauer		D	W	E			dl	e
Agonis linearifolia (DC.) Schauer		D		E			d	e
Agonis juniperina Schauer			W		a			e
Agonis marginata (Labill.) Schauer			W	E		c	d	e
Astartea fascicularis (Labill.) DC.				E		c		e
Beaufortia elegans Schauer	I						d	e
Beaufortia micrantha Schauer				E			d	e
Beaufortia squarrosa Schauer	I						d	e
Calothamnus chrysantherus F. Muell.	I						d	e
Calothamnus gracilis R.Br.				E			d	e
Calothamnus pinifolius F. Muell.				E		c		e
Calothamnus quadrifidus R.Br.	I	D		E		c	d	e
Calothamnus sanguineus Labill.	I	D					d	e
Calytrix strigosa Cunn.	I						d	e
Calytrix tetragona Labill.				E		c	d	Aus.
Chamelaucium axillare F. Muell.				E			d	e
Chamelaucium uncinatum Schauer	I	D					d	e
Darwinia diosmoides (DC.) Benth.				E		c	d	e
Darwinia neildiana F. Muell.	I						d	e
Darwinia vestita (Endl.) Benth.				E			d	e
Eremaea beaufortioides Benth.	I						d	e
Eremaea ebracteata F. Muell.	I						d	e
Eremaea pauciflora (Endl.) Druce		D					d	e
Eremaea violacea F. Muell.	I						d	e
Eucalyptus angulosa Schauer			W	E		c	d	Aus.
Eucalyptus calophylla Lindley	I	D	W				d	e
Eucalyptus conglobata (R.Br.) Maiden				E		c	d	Aus.
Eucalyptus cooperiana F. Muell.				E			d	e
Eucalyptus cornuta Labill.			W	E			d	e
Eucalyptus decipiens Endl.		D					d	e
Eucalyptus diversicolor F. Muell.			W				d	e
Eucalyptus diversifolia Bonpl.				E		c	d	Aus.
Eucalyptus eremophila (Diels) Maiden				E			d	e
Eucalyptus erythrocorys F. Muell.	I						d	e
Eucalyptus eudesmioides F. Muell.	I					c		e
Eucalyptus foecunda Schauer				E		c		Aus.
Eucalyptus gomphocephala DC.		D					d	e
Eucalyptus incrassata Labill.				E			d	Aus.
Eucalyptus lehmannii Schauer				E			d	e
Eucalyptus leptopoda Benth.	I						d	e
Eucalyptus loxophleba Benth.	I						d	e
Eucalyptus marginata Donn ex Smith		D	W				d	e
Eucalyptus megacarpa F. Muell.			W				d	e
Eucalyptus merrickiae Maiden & Blakely				E			d	e
Eucalyptus obtusiflora DC.	I						d	e
Eucalyptus oraria L. Johnson	I						d	e
Eucalyptus platypus Hook.				E			d	e
Eucalyptus rudis Endl.		D			a			e
Eucalyptus todtiana F. Muell.	I						d	e
Eucalyptus uncinata Turcz.				E			d	e
Hypocalymma angustifolium Endl.		D					d	e
Hypocalymma robustum Endl.		D					d	e

Kunzea baxteri (Klotzsch) Schauer				E			d	e
Leptospermum oligandrum Turcz.	I						d	e
Leptospermum sericeum Labill.				E		c		e
Leptospermum spinescens Endl.	I						d	e
Lhotskya ericoides Schauer			W				d	e
Melaleuca acerosa Schauer	I	D	W				dl	e
Melaleuca acuminata F. Muell.		D			a			Aus.
Melaleuca brevifolia Turcz.				E	a		dl	e
Melaleuca cardiophylla F. Muell.	I						d	e
Melaleuca cuticularis Labill.		D	W	E	a			e
Melaleuca diosmifolia Andrews				E			d	e
Melaleuca elliptica Labill.				E			d	e
Melaleuca globifera R.Br.				E			d	e
Melaleuca huegelii Endl.	I	D	W				dl	e
Melaleuca lanceolata Otto	I	D	W	E	a	c	d	Aus.
Melaleuca lateriflora F. Muell. ex Benth.	I						d	e
Melaleuca laxiflora Turcz.		D			a			e
Melaleuca leiopyxis F. Muell. ex Benth.	I						d	e
Melaleuca megacephala F. Muell.	I						d	e
Melaleuca microphylla Smith		D	W	E			d	e
Melaleuca pentagona Labill.				E		c	d	e
Melaleuca preissiana Schauer			W		a			e
Melaleuca pulchella R.Br.				E			d	e
Melaleuca quadrifaria F. Muell.				E		c		e
Melaleuca radula Lindley				E			d	e
Melaleuca rhaphiophylla Schauer		D			a			Aus.
Melaleuca scabra R.Br.	I						d	e
Melaleuca sclerophylla Diels				E			d	e
Melaleuca thyoides Turcz.	I			E	a			e
Melaleuca violacea Schauer				E		c		e
Scholtzia spathulata (Turcz.) Benth.	I						d	e
Scholtzia umbellifera F. Muell.	I						d	e
Thryptomene baeckeacea F. Muell.	I						d	e
Thryptomene saxicola (Cunn. ex Hook.) Schauer			W	E		c		e
Verticordia brownii (Desf.) DC.				E			d	e
Verticordia densiflora Lindley	I						d	e
Verticordia grandis J. Drumm. ex Meissner	I						d	e
Verticordia minutiflora F. Muell.				E		c		e
Verticordia plumosa (Desf.) Druce			W	E			d	e
Onagraceae								
Epilobium billardierianum Ser.		D					d	Aus.
* *Oenothera drummondii* Hook.		D					d	
Haloragaceae								
Glischrocaryon aureum (Lindley) Orchard	I	D					d	Aus.
Gonocarpus scordioides (Benth.) Orchard				E			d	e
Haloragis acutangula F. Muell.				E	a			Aus.
Haloragis brownii (J.D. Hook.) Schindler		D			a			Aus.
Haloragodendron racemosum (Labill.) Orchard			W	E		c	d	e
Apiaceae								
Apium annuum P.S. Short		D				c		Aus.
Apium prostratum Labill. ex Vent.	I	D	W	E	a	c		W
Centella asiatica (L.) Urban		D			a			W
Daucus glochidiatus (Labill.) Fischer		D	W	E			dl	W
Eryngium pinnatifidum Bunge & Ave-Lall.		D					d	W
Homalosciadium homalocarpum (F. Muell.) H. Eichler		D					d	e
Hydrocotyle alata R.Br.				E	a			e
Hydrocotyle diantha DC.		D	W	E	a		d	Aus.
Hydrocotyle hispidula Bunge		D					d	e
Hydrocotyle medicaginoides Turcz.				E		c		Aus.

Hydrocotyle tetragonocarpa Bunge		D					d	e
Platysace compressa (Labill.) Norman		D	W	E		c	d	e
Platysace xerophila (E. Pritzel) L. Johnson	I						d	e
Trachymene anisocarpa (Turcz.) B.L. Burtt			W			c		Aus.
Trachymene coerulea R.A. Graham	I	D					dl	e
Trachymene pilosa Smith		D	W	E			d	Aus.
Xanthosia candida (Benth.) Steudel		D					d	e
Xanthosia huegelii (Benth.) Steudel		D					d	e
Xanthosia pusilla Bunge	I						d	Aus.
Xanthosia rotundifolia DC.				E			d	e
Epacridaceae								
Acrotriche cordata (Labill.) R.Br.	I	D	W	E		c	d	Aus.
Andersonia lehmanniana Sonder	I						d	e
Andersonia parvifolia R.Br.				E		c		e
Andersonia simplex (Stschegl.) Druce			W				d	e
Andersonia sprengelioides R.Br.		D	W	E		c	d	e
Astroloma baxteri DC.		D					d	e
Astroloma ciliatum (Lindley) Druce		D					d	e
Astroloma drummondii Sonder		D					d	e
Astroloma microcalyx Sonder		D					d	e
Astroloma pallidum R.Br.		D					d	e
Astroloma serratifolium (DC.) Druce	I						d	e
Conostephium drummondii (Stschegl.) C. Gardner				E			d	e
Conostephium pendulum Benth.		D					d	e
Conostephium preissii Sonder	I	D					d	e
Leucopogon allittii F. Muell.	I						d	e
Leucopogon apiculatus R.Br.				E			d	e
Leucopogon australis R.Br.		D					d	Aus.
Leucopogon conostephioides DC.	I						d	e
Leucopogon insularis A. Cunn. ex DC.		D					d	e
Leucopogon interruptus R.Br.				E			d	e
Leucopogon marginatus W. Fitzg.	I	D					d	e
Leucopogon obovatus (Labill.) R.Br.			W	E		c	d	e
Leucopogon oxycedrus Sonder		D					d	e
Leucopogon parviflorus (Andrews) Lindley	I	D	W	E		c	d	W
Leucopogon polymorphus Sonder	I						d	e
Leucopogon propinquus R.Br.		D					d	e
Leucopogon racemulosus DC.		D					d	e
Leucopogon reflexus R.Br.			W				d	e
Leucopogon rotundifolius R.Br.				E			d	e
Leucopogon striatus R.Br.	I						d	e
Leucopogon tenuis DC.		D					d	e
Lysinema ciliatum R.Br.	I	D	W	E			d	e
Styphelia hainesii F. Muell.				E		c		e
Primulaceae								
* *Anagallis arvensis* L.	I	D	W	E			dl	
Samolus junceus R.Br.		D			a			e
Samolus repens (Forster & G. Forster) Pers.	I	D	W	E	a	c	d	W
Plumbaginaceae								
Muellerolimon salicorniaceum (F. Muell.) Lincz.	I	D			a		dl	e
Loganiaceae								
Logania buxifolia F. Muell.			W				d	e
Logania fasciculata R.Br.				E			d	e
Logania spermacocea F. Muell.	I						d	e
Logania vaginalis (Labill.) F. Muell.	I	D		E			d	e
Mitrasacme paradoxa R.Br.		D		E	a		d	Aus.
Gentianaceae								
* *Centaurium erythraea* Rafn		D	W	E			d	

* *Centaurium spicatum* (L.) Fritsch	I	D						dl	
Sebaea ovata (Labill.) R.Br.				E				d	Aus.
Menyanthaceae									
Villarsia parnassifolia (Labill.) R.Br.				E				d	e
Apocynaceae									
Alyxia buxifolia R.Br.	I	D		E			c	dl	Aus.
Asclepiadaceae									
Sarcostemma australe R.Br.	I						c		Aus.
Convolvulaceae									
Dichondra repens Forster and G. Forster		D	W	E				d	W
Wilsonia backhousei Hook.	I	D	W		a		c		Aus.
Wilsonia humilis R.Br.	I	D			a			dl	Aus.
Cuscutaceae									
Cuscuta australis R.Br.	I							d	W
* *Cuscuta epithymum* (L.) L.		D				b		d	
Boraginaceae									
Halgania lavandulacea Endl.				E			c		Aus.
Myosotis australis R.Br.		D						d	W
Verbenaceae									
* *Phyla nodiflora* (L.) E. Greene		D						d	
Chloanthaceae									
Pityrodia bartlingii (Lehm.) Benth.	I	D						d	e
Pityrodia hemigenioides (F. Muell.) Benth.	I							d	e
Pityrodia loxocarpa (F. Muell.) Druce	I							d	e
Pityrodia verbascina (F. Muell.) Benth.	I							d	e
Avicenniaceae									
Avicennia marina (Forsskal) Vierh.	I	D			a				W
Lamiaceae									
Hemiandra pungens R.Br.	I	D						dl	e
Hemigenia pimelifolia F. Muell.	I							d	e
Hemigenia saligna Diels	I							d	e
Microcorys purpurea R.Br.				E				d	e
Westringia dampieri R.Br.	I	D	W	E		b	c	d	Aus.
Solanaceae									
Anthocercis genistoides Miers	I			E			c		e
Anthocercis littorea Labill.	I	D	W	E		b	c	d	e
Anthocercis viscosa R.Br.			W	E			c	d	e
* *Lycium ferocissimum* Miers	I			E			c	d	
* *Nicotiana glauca* R.A. Graham	I	D				b		d	
Nicotiana rotundifolia Lindley.	I							dl	e
* *Solanum linnaeanum* Hepper & P.-M.L. Jaeger		D						d	
* *Solanum nigrum* L.	I	D	W	E				dl	
Solanum oldfieldii F. Muell.	I							d	e
Solanum simile F. Muell.	I			E				d	Aus.
Solanum symonii H. Eichler	I	D	W	E				dl	Aus.
Scrophulariaceae									
* *Bellardia trixago* (L.) All.		D			a			d	
* *Dischisma arenarium* E. Meyer		D	W	E		b		d	
Glossostigma drummondii Benth.				E	a				Aus.
Limosella australis R.Br.				E	a				W
* *Parentucellia latifolia* (L.) Caruel		D						d	

* *Parentucellia viscosa* (L.) Caruel		D	W					d	
* *Verbascum virgatum* Stokes		D			a			d	
Veronica calycina R.Br.		D						d	Aus.
Veronica distans R.Br.		D	W					d	Aus.
Orobanchaceae									
* *Orobanche minor* Smith		D						d	
Myoporaceae									
Eremophila glabra (R.Br.) Ostenf.	I	D						dl	Aus.
Myoporum apiculatum A.DC.		D						d	e
Myoporum gracile Bartling		D						d	e
Myoporum insulare R.Br.	I	D	W	E		b	c	d	Aus.
Myoporum oppositifolium R.Br.			W	E				dl	e
Myoporum tetrandrum (Labill.) Domin		D		E	a	b		d	e
Plantaginaceae									
* *Plantago coronopus* L.		D						d	
Plantago varia R.Br.		D		E				d	Aus.
Rubiaceae									
* *Galium murale* (L.) All.		D						d	
Opercularia apiciflora Labill.			W					d	e
Opercularia hispidula Endl.		D		E	a			d	e
Opercularia spermacocea Labill.				E				d	e
Opercularia vaginata Labill.		D	W					d	e
* *Sherardia arvensis* L.		D						d	
Valerianaceae									
* *Centranthus ruber* (L.) DC.		D						d	
Dipsacaceae									
* *Scabiosa atropurpurea* L.		D						d	
Campanulaceae									
* *Wahlenbergia capensis* (L.) A.DC.	I							d	
Wahlenbergia gracilenta Loth.				E				d	Aus.
Wahlenbergia preissii Vriese		D						d	Aus.
Lobeliaceae									
Isotoma hypocrateriformis (R.Br.) Druce		D						d	e
Isotoma scapigera (R.Br.) G. Don				E	a		c		Aus.
Lobelia alata Labill.		D	W	E		b	c	d	W
Lobelia heterophylla Labill.	I	D		E				d	Aus.
Lobelia tenuior R.Br.		D			a			d	e
Goodeniaceae									
Anthotium humile R.Br.		D			a				e
Dampiera cuneata R.Br.				E				d	e
Dampiera fasciculata R.Br.				E				d	e
Dampiera haematotricha Vriese	I							d	e
Dampiera incana R.Br.	I							d	e
Dampiera lavandulacea Lindley	I			E				d	Aus.
Dampiera linearis R.Br.		D						dl	e
Dampiera parviflora R.Br.				E				d	e
Dampiera prostrata Vriese				E				d	e
Dampiera restiacea E. Pritzel	I							d	e
Dampiera spicigera Benth.	I							d	e
Goodenia affinis Vriese				E				d	Aus.
Goodenia decursiva W. Fitzg.				E				d	e
Goodenia quadrilocularis R.Br.				E			c		e
Goodenia scapigera R.Br.				E				d	e
Lechenaultia floribunda Benth.		D						d	e

Lechenaultia formosa R.Br.				E				d	e
Lechenaultia hirsuta F. Muell.	I							d	e
Lechenaultia linarioides DC.	I	D						dl	e
Lechenaultia tubiflora R.Br.				E				d	e
Scaevola aemula R.Br.				E				d	Aus.
Scaevola auriculata Benth.				E				d	e
Scaevola canescens Benth.	I	D						dl	e
Scaevola crassifolia Labill.	I	D	W	E		b	c	d	Aus.
Scaevola globulifera Labill.		D						d	e
Scaevola holosericea Vriese		D						d	e
Scaevola linearis R.Br.				E				d	Aus.
Scaevola nitida R.Br.		D	W					dl	Aus.
Scaevola paludosa R.Br.	I	D						dl	e
Scaevola phlebopetala F. Muell.	I							d	e
Scaevola porocarya F. Muell.	I							d	e
Scaevola thesioides Benth.	I	D						dl	e
Verreauxia villosa E. Pritzel	I							d	e
Stylidiaceae									
Levenhookia pusilla R.Br.				E			c		Aus.
Stylidium adnatum R.Br.			W	E			c	d	e
Stylidium brunonianum Benth.	I	D						d	e
Stylidium bulbiferum Benth.		D						d	e
Stylidium calcaratum R.Br.				E				d	Aus.
Stylidium caricifolium Lindley		D						d	e
Stylidium crossocephalum F. Muell.	I							d	e
Stylidium despectum R.Br.				E				d	Aus.
Stylidium elongatum Benth.	I							d	e
Stylidium fasciculatum R.Br.			W					d	e
Stylidium glandulosum Salisb.				E			c		e
Stylidium glaucum Labill.		D		E				d	e
Stylidium junceum R.Br.	I	D						d	e
Stylidium macrocarpum (Benth.) Erickson & Willis	I							d	e
Stylidium maitlandianum E. Pritzel	I							d	e
Stylidium perpusillum Hook.				E				d	Aus.
Stylidium piliferum R.Br.		D						d	e
Stylidium pilosum Labill.				E				d	e
Stylidium pseudocaespitosum Mildbr.		D						d	e
Stylidium pubigerum Sonder				E			c		e
Stylidium repens R.Br.	I	D						d	e
Stylidium schoenoides DC.		D						d	e
Stylidium violaceum R.Br.	I							d	e
Asteraceae									
Actinobole uliginosum (A. Gray) H. Eichler			W	E			c		Aus.
Actites megalocarpa (J.D. Hook.) N.S. Lander	I	D	W	E		b	c		Aus.
Angianthus cunninghamii (DC.) Benth.	I	D				b			e
Angianthus preissianus (Steetz) Benth.		D		E	a				Aus.
Angianthus tomentosus Wendl.	I							d	Aus.
* *Arctotheca calendula* (L.) Levyns		D	W	E				d	
* *Arctotheca populifolia* (P. Bergius) Norlindh	I	D	W			b			
* *Arctotis stoechadifolia* P. Bergius		D				b			
* *Aster subulatus* Michaux		D			a				
Asteridea nivea (Steetz) G. Kroner				E			c		e
Asteridea pulverulenta Lindley	I	D						d	e
Brachycome ciliaris (Labill.) Less.	I							dl	Aus.
Brachycome iberidifolia Benth.		D						d	Aus.
Brachycome pusilla Steetz				E			c		e
Calocephalus brownii (Cass.) F. Muell.		D	W	E		b	c	d	Aus.
* *Carduus pycnocephalus* L.		D						d	
* *Carduus tenuiflorus* Curtis		D	W	E				d	
* *Centaurea melitensis* L.		D						d	

* *Cirsium vulgare* (Savi) Ten.			W	E				dl	
* *Conyza bonariensis* (L.) Cronquist	I	D		E			c	d	
Cotula australis (Sieber ex Sprengel) J.D. Hook.		D	W	E				d	Aus.
Cotula coronopifolia L.		D	W	E	a				W
Cotula cotuloides (Steetz) Druce	I	D	W	E				dl	e
* *Crepis foetida* L.		D						d	
* *Dittrichia graveolens* (L.) W. Greuter		D	W	E	a			dl	
Gnaphalium gymnocephalum DC.			W					d	Aus.
Gnaphalium indutum J.D. Hook.			W	E				d	Aus.
Gnaphalium sphaericum Willd.			W	E			c		Aus.
Gnephosis drummondii (A. Gray) P.S. Short				E	a				Aus.
Helichrysum bracteatum (Vent.) Andrews		D	W				c	d	Aus.
Helichrysum cordatum DC.	I	D	W			b		d	e
Helichrysum obtusifolium F. Muell. & Sonder	I			E				d	Aus.
Helipterum cotula (Benth.) DC.	I	D						d	Aus.
Helipterum floribundum DC.				E				d	Aus.
* *Hypochaeris glabra* L.		D	W	E	a		c	d	
Ixiolaena viscosa Benth.				E				d	e
* *Lactuca saligna* L.	I	D						dl	
* *Lactuca serriola* L.		D		E			c	d	
Lagenifera huegelii Benth.		D						d	Aus.
Leptorhynchos scabrus L. Haegi		D						d	Aus.
Millotia myosotidifolia (Benth.) Steetz		D						d	Aus.
Millotia tenuifolia Cass.		D	W					d	Aus.
Olearia axillaris (DC.) F. Muell. ex Benth.	I	D	W	E		b	c	d	Aus.
Olearia elaeophila (DC.) F. Muell. ex Benth.	I							d	e
Olearia revoluta F. Muell. ex Benth.	I							d	Aus.
Olearia rudis (Benth.) F. Muell. ex Benth.	I	D						dl	Aus.
* *Osteospermum clandestinum* (Less.) Norlindh		D						d	
Picris squarrosa Steetz		D		E				d	W
Pithocarpa pulchella Lindley		D						d	e
Podolepis gracilis (Lehm.) R.A. Graham	I	D						d	e
Podolepis lessonii (Cass.) Benth.		D						d	Aus.
Podolepis nutans Steetz		D						d	e
Podotheca angustifolia (Labill.) Less.		D		E				d	Aus.
Podotheca chrysantha (Steetz) Benth.		D						d	e
Pogonolepis stricta Steetz		D						d	e
* *Pseudognaphalium luteoalbum* (L.) Hilliard & B.L. Burtt			W	E			c		
Quinetia urvillei Cass.		D	W	E				d	Aus.
* *Reichardia tingitana* (L.) Roth	I					b			
* *Senecio elegans* L.		D	W			b			
Senecio glossanthus (Sonder) Belcher	I							d	Aus.
Senecio hispidulus A. Rich.		D						d	Aus.
Senecio lautus G. Forster ex Willd.	I	D	W	E		b	c	d	Aus.
Senecio ramosissimus DC.		D		E				d	e
Siloxerus humifusus Labill.		D		E	a			d	e
* *Sonchus asper* Hill				E				d	
* *Sonchus oleraceus* L.	I	D	W	E		b		d	
Stuartina muelleri Sonder				E				d	Aus.
* *Urospermum picroides* (L.) Scop. ex F.W. Schmidt		D						d	
* *Ursinia anthemoides* (L.) Poiret	I	D						d	
* *Vellereophyton dealbatum* (Thunb.) Hilliard & B.L. Burtt			W	E				d	
Vittadinia gracilis (J.D. Hook.) N. Burb.				E				d	Aus.
Vittadinia triloba (Gaudich.) DC.				E			c		Aus.
Waitzia acuminata Steetz	I							d	Aus.
Waitzia citrina (Benth.) Steetz		D		E				dl	Aus.
Waitzia podolepis (Gaudich.) Benth.		D						d	e
Waitzia suaveolens (Benth.) Druce		D						d	e

Cyanogenesis in Australian Leguminosae: Herbarium survey of some *Acacia* and Papilionoideae species

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Abstract

Maslin, B.R., Conn, E.E. and Hall, N. Cyanogenesis in Australian Leguminosae: Herbarium survey of some *Acacia* and Papilionoideae species. Kingia 1(3): 283-294 (1990). Foliage from 855 *Acacia* and 294 Papilionoideae specimens was tested for its ability to release HCN in the presence of added ß-glucosidase. Of the 15 taxa shown to release HCN six were not previously known as cyanogenic, namely, *A. deanei* subsp. *deanei*, *A. polybotrya*, *A. pulchella* var. *pulchella*, *A. pulchella* var. ?, *Canavalia papuana* and *Erythrina vespertilio*. *Acacia dealbata* subsp. *dealbata* was questionably cyanogenic and should be examined further.

Introduction

In a survey of cyanogenesis in Australian species of *Acacia* Conn *et al.* (1985) showed that 44 species were capable of releasing HCN from their foliage in the presence of added ß-glucosidase. A majority of these taxa occurred in section *Juliflorae*, i.e. 37 species, where the two aromatic glycosides, sambunigrin and its epimer prunasin, tended to occur in the ratio of about 80:20 (Maslin *et al.* 1988). Lower numbers of cyanogenic taxa occurred in sections *Acacia* (2 spp.), *Botrycephalae* (4 spp.) and *Pulchellae* (1 sp.). For the reasons outlined below it was decided to sample additional herbarium specimens from the latter two sections.

Relatively few specimens of section *Botrycephalae* were tested by Conn *et al.* (1985). However, the study suggested that the incidence of cyanogenesis in this section was lower than in section *Juliflorae* and furthermore, prunasin rather than sambunigrin seemed to be the predominant glucoside. An expanded herbarium survey was undertaken in order, firstly to obtain a better assessment of the incidence of cyanogenesis in the section, and secondly, to obtain localities for cyanogenic individuals so that material could be collected for analysis to enable the glycosides to be identified.

Most cyanogenic infraspecific taxa of *A. pulchella* possess the aromatic glycosides sambunigrin and prunasin (Maslin *et al.* 1988). The exception is var. *reflexa* which has the aliphatic glucoside heterodendrin. The existence of more than one biosynthetic pathway for the production of cyanogenic glycosides within a single species is rare and was first reported by Spencer and Seigler (1985) in *Passiflora lutea* L. Because of this discovery in *Acacia* and because we wanted to examine further the phenomenon of polymorphism for cyanogenesis within *A. pulchella*, it was decided to undertake an expanded herbarium survey of this species as a basis for future studies. All known variants of the species were therefore sampled.

Our reason for including some papilionoid species in this study was to provide missing data for a review on cyanogenesis in the Leguminosae. This review is now completed and will be published elsewhere (Seigler *et al.* in press).

Methods

Foliage from herbarium specimens of various *Acacia* and papilionoid legume species was tested for its ability to release HCN in the presence of added ß-glucosidase. The methodology employed is described in Conn *et al.* (1985). Specimens sampled are listed in Appendix 1 and are located at the Western Australian Herbarium (PERTH) and the herbarium of the Royal Botanic Gardens, Sydney (NSW).

Results

Appendix 1 lists the 1149 herbarium specimens tested and those giving a positive test for HCN are marked with an asterisk (*). These results are summarized in Table 1 (*Acacia*) and Table 2 (Papilionoideae).

The testing of 855 *Acacia* specimens revealed ten cyanogenic taxa. Of these, four are additional to those recorded by Conn *et al.* (1985), namely, *A. deanei* subsp. *deanei* and *A. polybotrya* (both section *Botrycephalae*) and *A. pulchella* var. *pulchella* and *A. pulchella* var. ? (both section *Pulchellae*). One specimen of *A. dealbata* subsp. *dealbata* (section *Botrycephalae*) reacted very weakly to the Feigl-Anger test and this taxon must be regarded as questionably cyanogenic. This survey also confirmed previous findings that cyanogenesis occurs in *A. deanei* subsp. *paucijuga* and *A. parramattensis* (both section *Botrycephalae*) and *A. pulchella* var. *glaberrima* (typical variant), *A. pulchella* ? var. *glaberrima* (Fitzgerald River variant) and *A. pulchella* var. *goadbyi* (all section *Pulchellae*). All *Botrycephalae* species plus *A. pulchella* var. *pulchella* showed a low incidence of cyanogenesis, i.e. less than 17% of specimens tested were cyanogenic. In the remaining varieties of *A. pulchella* the percentage of cyanogenic to acyanogenic specimens was higher. However, it is noted that in *A. pulchella* ? var. *glaberrima* and *A. pulchella* var. ? only 2 and 4 specimens respectively were tested.

Based on the above findings we conducted field work to acquire fresh material of relevant taxa for chemical analysis. The results of this endeavour and a discussion of the taxonomic significance of cyanogenesis in *Acacia* are presented in Maslin *et al.* (1988).

The 294 Papilionoideae specimens tested represented 62 species of which only five showed cyanogenic members, namely *Canavalia papuana*, *Erythrina vespertilio*, *Goodia lotifolia*, *Lotus australis* and *Lotus cruentus*. The first two species were hitherto not known to be cyanogenic. The percentage of cyanogenesis in specimens of these 5 species varied from 20% to 50%. However, in the case of *Canavalia papuana* and *Erythrina vespertilio* only 5 specimens of each species were tested. The taxonomic significance of cyanogenesis in the Fabaceae is discussed in Seigler *et al.* (in press).

Table 1. Cyanogenic Australian species of *Acacia* section *Botrycephalae* and *Acacia* section *Pulchellae* showing numbers of herbarium specimens which released HCN from their foliage in the presence of added ß-glucosidase. These data are additional to those given in Table 1 of Conn *et al.* (1985). Voucher specimens are listed in Appendix 1

Taxon	Section	Herbarium specimens	
		Total no. tested	No. HCN positive
A. dealbata subsp. *dealbata*	Botrycephalae	49	1 *
A. deanei subsp. *deanei*	Botrycephalae	41	1 + 2 *
A. deanei subsp. *paucijuga*	Botrycephalae	26	4
A. parramattensis	Botrycephalae	60	2 +1 *
A. polybotrya	Botrycephalae	20	1
A. pulchella var. *glaberrima* (typical variant)	Pulchellae	58	13
A. pulchella ? var. *glaberrima* (Fitzgerald River variant)	Pulchellae	2	2
A. pulchella var. *goadbyi*	Pulchellae	20	17
A. pulchella var. *pulchella*	Pulchellae	72	2
A. pulchella var. ?	Pulchellae	4	4

* Dubious positive, i.e. a very slow, weak Feigl-Anger response.

Table 2. Cyanogenic species of Papilionoideae showing numbers of herbarium specimens which released HCN from their foliage in the presence of added ß-glucosidase. Voucher specimens are listed in Appendix 1

Species	Tribe	Herbarium specimens	
		Total no. tested	No. HCN positive
Canavalia papuana	Phaseoleae	5	1
Erythrina vespertilio	Phaseoleae	5	2
Goodia lotifolia	Bossiaeae	14	5
Lotus australis	Loteae	22	11
Lotus cruentus	Loteae	38	24

References

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Maslin, B.R., Dunn, J.E. and Conn, E.E. (1988). Cyanogenesis in Australian species of *Acacia*. Phytochemistry 27: 421-428.

Seigler, D.S., Maslin, B.R. and Conn, E.E. (in press). Cyanogenesis in the Leguminosae. *In*: C.H. Stirton and J.L. Zarucchi (eds), Advances in Legume Biology. Monographs in Systematic Botany from the Missouri Botanical Garden, Vol. 29. Missouri Botanical Garden, St Louis.

Spencer, K.E. and Seigler, D.S. (1985). Co-occurrence of Valine/Isoleucine - Derived and Cyclopentenoid Cyanogens in a *Passiflora* species. Biochemical Systematics and Ecology 13: 303-304

Appendix 1. Herbarium specimens of some Australian species of *Acacia* and Papilionoideae tested for cyanogenic glycosides

Taxa are arranged alphabetically with undescribed section *Botrycephalae* species at the end of *Acacia*. Specimens and taxa giving a positive Feigl-Anger test for HCN are marked with an asterisk (*). Specimens and taxa reacting very weakly to the Feigl-Anger test and thus regarded as dubiously HCN positive are marked with a cross(+). Voucher specimens are listed by collector or date or by institution number. Abbreviations for herbaria: NSW - Herbarium of the Royal Botanic Gardens, Sydney, N.S.W.; PERTH - Western Australian Herbarium, Perth, W.A.

Acacia baileyana

Cunningham, G.M. & Milthorpe, P.L. s.n., 27 July 1974 (NSW); Salasoo, H. s.n., 30 Dec. 1964 (NSW); NSW 95790; NSW 95791; NSW 95794.

A. cardiophylla

Boorman, J. s.n., Dec. 1897 (NSW); Cunningham, G.M. 797 (NSW); Cunningham, G.M. 1400 (NSW); Manten, J.A. s.n., 2 Dec. 1971 (NSW); Morris, A.K. C135 (NSW); Willis, J.H. s.n., 3 Oct. 1969 (NSW); NSW 59121; NSW 65986; NSW 68976 (or 65976); NSW 101234; NSW 104356.

A. chinchillensis

Coveny, R. 6813 (NSW); Hall, N. H77/123 (NSW); Pedley, L. s.n., 6 Dec. 1972 (NSW).

A. chrysotricha

Burgess, P. s.n., 10 May 1970 (NSW); Floyd, A. 766 (NSW); Floyd, A. s.n., 20 July 1961 (NSW); NSW 8153.

A. constablei

Nunnick, A. s.n., 24 Nov. 1981 (NSW); Nunnick, A. s.n., 29 Oct. 1982 (NSW); NSW 53869; NSW 64644; NSW 154168.

+*A. dealbata*

Benson, D. 311 (NSW); Coveny, R. (NSW 148662); Debenham, C. s.n., Oct. 1960 (NSW); Hartley, T.G. 13387 (NSW); Lassak, E. s.n., 9 Oct. 1978 (NSW); Salasoo, H. s.n. (NSW); Thompson, G. 625 (NSW); NSW 5992; NSW 8178; NSW 8182; NSW 8197; NSW 8302; NSW 8723; +NSW 8781; NSW 29319; NSW 42236; NSW 42250; NSW 43083; NSW 45201; NSW 45202; NSW 45210; NSW 45215; NSW 45217; NSW 47255; NSW 48107; NSW 48117; NSW 48121; NSW 48610; NSW 48611; NSW 49403; NSW 49404; NSW 52613; NSW 52801; NSW 52962; NSW 53006; NSW 53943; NSW 59962; NSW 59996; NSW 60000; NSW 60006; NSW 63232 (or 63252); NSW 67686; NSW 70232; NSW 75420; NSW 78936; NSW 84616; NSW 84387; NSW 100346; Carcoar, Sept. 1882 (NSW).

A. dealbata subsp. A

Rodd, A. 1019 (NSW); NSW 84554; NSW 84559; NSW 84567; NSW 84569; NSW 84575; NSW 84584.

A. deanei

Armitage, I.B. 1383 (PERTH); Boorman, J.L. s.n. (PERTH 00463388); Story, R. and Yapp, G. 313 (PERTH); Tindale, M. 63797 (PERTH).

* + *A. deanei* subsp. *deanei*

Armitage, I.B. 1183 (NSW); Atkinson, W.R. s.n., 21 May 1974 (NSW); Benson, D.M. & Pickard, J. 1799 (NSW); Constable, E.F. 7131 (PERTH); Fox, M. 8006001 (NSW); Gittins, C.H. 1163 (NSW); Hall, N. 1178/81 (NSW); Hall, N. 1179/67 (PERTH); Hall, N. 1179/69 (PERTH); Hall, N. 1179/82 (*PERTH); Kennedy, B. s.n., 26 Oct. 1978 (NSW); Moore, C.W.E. 6416 (+NSW); Newman, I.V. 905 (NSW); Olsen, I. 3032 (NSW); Pasterfield s.n., Nov. 1975 (NSW); Slade, C. 103878 (PERTH); Story, R. 7425 (NSW); Tindale, M. 63794 (PERTH); Wilson, K. 2459 (NSW); +NSW 4632; NSW 5468; NSW 8084; NSW 8058; NSW 8093; NSW 8096; NSW 8334; NSW 46177; NSW 51372; NSW 59922; NSW 60020; NSW 60049; NSW 60056; NSW 63795; NSW 82336; NSW 84241; NSW 95444; NSW 95801; NSW 95835; NSW 95837; NSW 97837; NSW 102371.

* *A. deanei* subsp. *paucijuga*

Boorman, J.L. s.n., Feb. 1899 (NSW); Constable, E.F. 4528 (NSW); Fox, M. 8208416 (NSW); Hargraves 8357 (NSW); Lassak, E. 79-D17 (*NSW); Milthorpe, P.L. 760 (NSW); NSW 8602; NSW 33639; NSW 33640; *NSW 59126; NSW 59899; *NSW 59900; NSW 61042; *NSW 63255; NSW 63788; NSW 63857; NSW 63858; NSW 68290; NSW 84632; NSW 84639; NSW 84644; NSW 101229; NSW 101230; NSW 104376; NSW 107083; Cocoparra Nat. Park (NSW).

A. debilis

Boorman, J.L. s.n., July 1913 (NSW); Coveny, R. 6794a (NSW); NSW 65881; NSW 151642.

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

A. decurrens
Benson, D. 304 (NSW); Benson, D. 309 (NSW); Benson, D. s.n., 12 May 1977 (NSW); CANB 019183 (NSW); Coveny, R. 4870 (NSW); Coveny, R. 8631 (NSW); Hamilton, B.A. 9 (NSW); Henry, s.n. 1941 (NSW); Lithgow, G.M. 181 (NSW); McKee, H.S. 11571 (NSW); NSW 8705; NSW 8715; NSW 41754; NSW 46174; NSW 47423; NSW 48529; NSW 48595; NSW 53042; NSW 63830; NSW 84521; NSW 95598; NSW 97454; NSW 108595.

A. elata
Austen, W.A. s.n., Feb. 1916 (NSW); Coveny, R. s.n., 13 May 1967 (NSW); Debenham, C. s.n., Nov. 1967 (NSW); NSW 48985; NSW 52964; NSW 60580; NSW 60587; NSW 60591; NSW 76551; NSW 77271; NSW 105047; NSW 124990.

A. filicifolia
Betteridge, C. 96 (NSW); Blaxell, D. & Coveny, R. 571 (NSW); Hall, N. H78/4 (NSW); Cross, R.D. s.n., 13 Apr. 1980 (NSW); Pickard, J. 173 (NSW); Telford, I.R. 8855 (NSW); Turner, J.C. 16 (NSW); NSW 6502; NSW 7720; NSW 7732; NSW 7735; NSW 47232; NSW 47369; NSW 47383; NSW 47404; NSW 47405; NSW 47507; NSW 48122; NSW 48448; NSW 49002; NSW 49003; NSW 52456; NSW 52527; NSW 52694; NSW 56905; NSW 61941; NSW 65677; NSW 70833; NSW 83734; NSW 99692; NSW 101282; NSW 119253; Wollomombi (Gorge?) (NSW).

A. fulva
Coveny, R. s.n., 17 Apr. 1965 (NSW); Coveny, R. s.n., 7 Sept. 1967 (NSW); Hibble, A. s.n., Aug. 1980 (NSW); Pickard, J. 60 (NSW); NSW 63249; NSW 89947.

A. glaucocarpa
Johnson, L. and Blaxell, D. 968 (NSW); BRI 22628 (NSW); NSW 60534; NSW 77719; NSW 102373; NSW 102562; NSW 106883; NSW 107109.

A. irrorata
Armitage, I .B. 1368 (PERTH); Constable, E.F. 6580 (PERTH); Constable, E.F. 6631 (PERTH); Constable, E.F. 6912 (PERTH); Constable, E.F. 56657 (PERTH); Cumming, R. 3143 (PERTH); Evans, M. 2776 (PERTH); Hall, N. H83/37 (PERTH); Messmer, P.R. 65990 (PERTH); Tindale, M.D. 64667 (PERTH).

A. irrorata subsp. *irrorata*
Briggs, B. s.n., Aug. 1964 (NSW); Constable, E.F. 2080 (PERTH); Coveny, R. 92 (NSW); Coveny, R. s.n., 26 Mar. 1967 (NSW); Debenham, C. (NSW 150540); Evans, M. 2776 (NSW); Evans, O.D. s.n., 6 Dec. 1961 (NSW); Filson, R. 667 (NSW); Floyd, A.G. 911 (NSW); Hall, N. H83/38 (PERTH); Salasoo, H. 4657 (NSW); Salasoo, H. s.n., 7 Jan. 1971 (NSW); Shambler, F.B. Jan 1932 (NSW); Tindale, M.D. 29 June 1964 (NSW); NSW 7775; NSW 7776; NSW 7778; NSW 7790; NSW 8306; NSW 25075; NSW 34452; NSW 34453; NSW 42738; NSW 47028; NSW 47264; NSW 47461; NSW 48231; NSW 48234; NSW 48236; NSW 52691; NSW 52890; NSW 52917; NSW 52919; NSW 52921; NSW 52930; NSW 53222; NSW 53223; NSW 53226; NSW 56657; NSW 61022; NSW 63188; NSW 63200; NSW 64667; NSW 82127; NSW 82128; NSW 83999; NSW 84003; NSW 92950; NSW 106856; NSW 148664.

A. irrorata subsp. *velutinella*
Tindale, M.D. 52911 (PERTH).

A. jonesii
Coveny, R. s.n., 17 Sept. 1967 (NSW); Fackender s.n., 18 Aug. 1968 (NSW); Mills, K. s.n., 13 June 1982 (NSW); Rumsey, H. s.n., Sept. 1898; NSW 49382; NSW 50176; NSW 77293.

A. latisepala
Coveny, R. 2268 (NSW); Coveny, R. 5724 (NSW); NSW 63190.

A. leucoclada
Constable, E.F. s.n., 17 Jan. 1958 (NSW); Hamilton, B.A. 14 (NSW); Newman, I.V. s.n., 26 May 1967 (NSW); Rupp, H.M.R. s.n., Aug. 1913 (NSW); Willis, J.H. s.n., 9 Oct. 1969 (NSW); Wilson, K. 2517 (NSW); Withers, G.A. s.n., 31 Oct. 1951 (NSW); NSW 7814; NSW 7819;NSW 25552; NSW 44264; NSW 47332; NSW 63804; NSW 78857; NSW 78883; NSW 102367.

A. leucoclada subsp. A
Williams, J.B. s.n., 21 July 1980 (NSW); NSW 46169; NSW 84892.

A. loroloba
Pedley, L., Lebler, B. & Tindale, M. s.n. (NSW 102609); Webb, L.J. and Tracey, J.G. 3386 (NSW); NSW 52692; NSW 102610; NSW 112750.

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

A. mearnsii
Betteridge, C.R. s.n. 16/6/74; Cambage, M.F. s.n., Nov. 1928 (NSW); CANB 035275 (NSW); Evans, M. 2709 (NSW); Giles, W.E. s.n., 19 Nov. 1961 (NSW); Hall, N. H78/98 (NSW); Jacobs, S. 2871 (NSW); Lee, A. 61 (NSW); Moore, C.W.E. 4662 (NSW); Olsen, L. s.n., 20 Dec. 1963 (NSW); Tindale, M. s.n. (NSW 52189); NSW 7798; NSW 8660; NSW 8686; NSW 52190; NSW 52614; NSW 53154; NSW 53780; NSW 53867; NSW 59956; NSW 59972; NSW 72133; NSW 72136; NSW 82133; NSW 90374; NSW 97457; NSW 98820; NSW 99354.

A. megacephala
Ashby, A.M. 4531 (PERTH); Coveny, R. 3000 (PERTH); George, A.S. 9220 (PERTH); Green, J.W. 474 (PERTH); Maslin, B.R. F12 (PERTH); Maslin, B.R. 74 (PERTH); Royce, R.D. 8030 (PERTH); Smith, E.B.J. s.n. (PERTH 00173371).

A. mitchellii
NSW 2830; NSW 83954; NSW 104270.

A. mollifolia
Ingram, C.R. s.n., 26 May 1963 (NSW); Johnson, M. s.n., Feb. 1973 (NSW); Weare, P.L. s.n., 27 May 1983 (NSW); NSW 8143; NSW 63836; NSW 64575; NSW 64577.

A. muelleriana
NSW 6504; NSW 41959; NSW 60592; NSW 60600; NSW 98787; NSW 104275.

A. nanodealbata
NSW 78966; NSW 95285; NSW 95286.

A. nanodealbata subsp. A
Corrick, M.G. 6540 (NSW); NSW 63177; NSW 90482.

A. olsenii
Boland, D.J. J17 (NSW); Coveny, R. 6357 et al. (NSW); Olsen, I. 3091 (NSW).

A. oshanesii
Ellison, D. s.n., 18 Sept. 1979 (NSW); Wilson, K.L. 3972 (NSW); NSW 90744; NSW 124451; NSW 132997.

* + *A. parramattensis*
Armitage, I. 1019 (NSW); Constable, E.F. 4129 (PERTH); Constable, E.F. 42284 (*PERTH); Constable, E.F. 52963 (PERTH); Constable, E.F. 57926 (PERTH); Constable, E.F. 58997 (PERTH); Coveny, R. 106 (NSW); Coveny, R. 10401 (NSW); Coveny, R. 10499 (*NSW); Coveny, R. 11440 (NSW); Croll, R.D. s.n., 13 Apr. 1980 (NSW); D'Arney, E. s.n. (NSW); Gray, M. 5968 (PERTH); Hall, N. H78/101 (PERTH); Hall, N. H79/104 (PERTH); Hall, N. H83/1 (PERTH); Hall, N. H83/3 (PERTH); Hall, N. H83/5 (PERTH); Hart, D. s.n. (PERTH 00463396); Pickard, J. 890 (NSW); Pickard, J. 999 (NSW); Pickard, J. & S. JP182 (NSW); Tindale, M.D. 716 (NSW); Tindale, M.D. 53044 (PERTH); Tindale, M.D. and Constable, E.F. 51313 (PERTH); NSW 8616; NSW 8620; NSW 8621; NSW 8629; NSW 8630; NSW 8678; NSW 8683; NSW 8689; NSW 27512; NSW 34421; NSW 34422; NSW 41755; NSW 46173; NSW 47262; NSW 47431; NSW 47464; NSW 47480; NSW 47705; NSW 48986; NSW 52963; NSW 52965; NSW 53039; NSW 53747; NSW 58995; NSW 59509; NSW 59513; NSW 59514; NSW 59515; NSW 59524; NSW 63803; NSW 84592; NSW 86593; +NSW 100269; NSW 101237; NSW 106774.

A. parvipinnula
CANB 030791 (NSW); Coveny, R. 4856 (NSW); Debenham, C. s.n., Nov. 1963 (NSW); Johnson, L.A.S. 8522 (NSW); Olsen, I. 2426 (NSW); Paolini, L.M. s.n., Nov. 1971 (NSW); Salasoo, H. s.n., 1 Dec. 1963 (NSW); NSW 42380; NSW 44439; NSW 46170; NSW 47476; NSW 47479; NSW 48872; NSW 48873; NSW 52194; NSW 52274; NSW 52526; NSW 72145; NSW 78902; NSW 89956; NSW 103755; NSW 124988; NSW 133003.

* *A. polybotrya*
Armitage, I.B. 1639 (PERTH); Coveny, R. 2337 (PERTH); Coveny, R. 2362 (NSW, PERTH); Kennedy, B. s.n., 31 Aug. 1976 (NSW); Laine, T. s.n., Aug. 1977 (NSW); Medhurst, G. 17 (NSW); Newman, I.V. 421 (NSW); Newman, I.V. 429 (NSW);Newman, I.V. 438 (NSW); Newman, I.V. 462 (NSW); Scott, A.W. s.n., 1 July 1970 (NSW); NSW 60512; NSW 60516; *NSW 60520; NSW 60521; NSW 97830; NSW 101366; NSW 107047; NSW 107048.

A. pruinosa
Boorman, J.L. s.n., Dec. 1914 (NSW); Coveny, R. 11731 (NSW); Coveny, R. 11735 (NSW); NSW 65894; NSW 104262; NSW 106943.

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

A. pubescens

Baker, R.T. s.n., Sept. 1905 (NSW); Baker, R.T. s.n., Sept. 1909 (NSW); Coveny, R. 10467 (NSW); Fraser, L. s.n., Sept. 1933 (NSW); Johnson, L.A.S. J7725 (NSW); NSW 8120; NSW 13239; NSW 53064; NSW 60631; NSW 85023.

* *A. pulchella* var. *glaberrima* (typical variant)

Ashby, A.M. 3661 (PERTH); Blackall, W.E. s.n. (*PERTH 00183423); Cranfield, R.J. 1602 (PERTH); Cranfield, R.J. R376 (PERTH); Cumming, R.J. 859 (*PERTH); Curry, S. 34 (PERTH); Edmiston, R. s.n. (*PERTH 00184373); Gardner, C.A. s.n. (PERTH 00184888); Gardner, C.A. s.n. (PERTH 00185388); George, A.S. 142 (*PERTH); George, A.S. 5934 (PERTH); Hutchison, D.E. s.n. (PERTH 00186309); James, A.M. 8 (PERTH); James, A.M. 209 (*PERTH); James, A.M. 209a (PERTH); Kagi, R.I. 7701 (PERTH); Lange, R.T. 64 (*PERTH); Marchant, N.G. 72/085 (PERTH); Maslin, B.R. 133 (PERTH); Maslin, B.R. 450 (*PERTH); Maslin, B.R. 465 (PERTH); Maslin, B.R. 609 (PERTH); Maslin, B.R. 613 (PERTH); Maslin, B.R. 616 (PERTH); Maslin, B.R. 616b (PERTH); Maslin, B.R. 664 (PERTH); Maslin, B.R. 666 (PERTH); Maslin, B.R. 1617 (PERTH); Maslin, B.R. 1617a (*PERTH); Maslin, B.R. 1671 (PERTH); Maslin, B.R. 2830 (PERTH); Maslin, B.R. 2832 (PERTH); Maslin, B.R. 2847 (PERTH); Maslin, B.R. 2984 (PERTH); Maslin, B.R. 3494 (PERTH); Maslin, B.R. 4186 (*PERTH); Maslin, B.R. s.n. (*PERTH 00456004); Paust, S. 69 (PERTH); Paust, S. 105 (PERTH); Paust, S. 706 (PERTH); Rechinger, K.H. 58891 (PERTH); Royce, R.D. 4623 (PERTH); Saffrey, R.A. 1567 (PERTH); Schock, F.M.C. s.n. (PERTH 00455997); Scrymgeour, E.M.2202b (PERTH); Seabrook, J. 71 (PERTH); Simmons, M.H. 1346 (PERTH); Smith, F.G. 1818 (PERTH); Stewart, W.S. Aust.-44 (PERTH); Story, R. 8244 (PERTH); Strid, A. 20284 (*PERTH); Talbot, L. F (*PERTH 0182982); Talbot, L. G (*PERTH 00182990); Tindale, M.D. 187 (PERTH); Tindale, M.D. 1279 (PERTH); Tindale, M.D. 143 & Maslin, B.R. (PERTH); Tindale, M.D. 363 & Maslin, B.R. (PERTH); Went, F.W. 43 (PERTH).

* *A. pulchella* ? var. *glaberrima* (Fitzgerald River variant)

Newbey, K. 5022 (*PERTH); Saffrey, R.A. 1459 (*PERTH).

* *A. pulchella* var. *goadbyi*

Cumming, R.J. 94 (PERTH); Dobson, H.E.M. 79024 (*PERTH); Edinger, D.J. 222 (*PERTH); George, A.S. 9861 (*PERTH); Harvey, W.H. s.n. (PERTH 00176214); Keighery, G.J. 2603 (PERTH); Keighery, G.J. 3435 (*PERTH); Keighery, G.J. 4008 (*PERTH); Maslin, B.R. 2854 (*PERTH); Maslin, B.R. 2855 (*PERTH); Maslin, B.R. 2966 (*PERTH); Maslin, B.R. 3520 (*PERTH); Maslin, B.R. 3521 (*PERTH); Maslin, B.R. 3771 (*PERTH); Maslin, B.R. 4390 (*PERTH); Royce, R.D. 3596 (*PERTH); Swainson, E. s.n. (*PERTH 00455423); Tindale, M.D. 304 & Maslin, B.R. (*PERTH); Tindale, M.D. 304a &Maslin, B.R. (*PERTH); Tindale, M.D. 307 & Maslin, B.R. (*PERTH).

* *A. pulchella* var. *pulchella*

Aplin, T.E.H. 2 (PERTH); Armstrong, P. 60 (PERTH); Ashby, A.M. 3663 (PERTH); Ashby, A.M. 4327 (PERTH); Ashby, A.M. 4374 (per H.E. Daniels) (PERTH); Bennett, E.M. 1081 (PERTH); Canning, E.M. WA/68 6624 (PERTH); Cashmore, A.B. 87 (PERTH); Chapman, C. s.n. (PERTH 00180637); Corrick, M.G. 8934 (PERTH); Demarz, H. 9845 (PERTH); Elliott, A. NSW 132952 (PERTH); Fairall, A.R. 573 (PERTH); George, A.S. 3046 (PERTH); George, A.S. 10125 (PERTH); Green, J.W. 1091 (PERTH); Green, J.W. 1722 (PERTH); Gregory s.n. (PERTH 00178624); Hartley, T.G. 13984 (PERTH); Jackson, E.N.S. 3223 (PERTH); Jackson, E.N.S. 3233 (PERTH); Jackson, S.W. s.n. (PERTH 00181102); Keighery, G.J. 5269 (PERTH); Keighery, G.J. 5581 (*PERTH); Keighery, G.J. 6766 (PERTH); Kenneally, K.F. 71/281B (PERTH); Kniep, N. (W.A. Naturalists' Club) s.n. (PERTH 00180122); Maiden, J.H. NSW 132953 (PERTH); Maiden, J.H. NSW 132954 (PERTH); Maslin, B.R. 7 (PERTH); Maslin, B.R. 436 (PERTH); Maslin, B.R. 451 (PERTH); Maslin, B.R. 468 (PERTH); Maslin, B.R. 483 (PERTH); Maslin, B.R. 622 (PERTH); Maslin, B.R. 623 (PERTH); Maslin, B.R. 753 (PERTH); Maslin, B.R. 1141 (PERTH); Maslin, B.R. 2807 (PERTH); Maslin, B.R. 2823 (PERTH); Maslin, B.R. 2829 (PERTH); Maslin, B.R. 2837 (PERTH); Maslin, B.R. 2845 (*PERTH); Maslin, B.R. 2869 (*PERTH); Maslin, B.R. 2874 (PERTH); Maslin, B.R. 2912 (PERTH); Maslin, B.R. 2965 (PERTH); Maslin, B.R. 3236 (PERTH); Maslin, B.R. 3249 (PERTH); Maslin, B.R. 3522 (PERTH); Maslin, B.R. 3731 (PERTH); Maslin, B.R. 3996 (*PERTH); Maslin, B.R. 4026 (PERTH); Maslin, B.R. 4369 (PERTH); Maslin, B.R. s.n. (PERTH 00178152); Maslin, B.R. s.n. (PERTH 00180564); Nelson, E.C. ANU 17212 (PERTH); Paust, S. 57 (PERTH); Rechinger, K.H. 58876 (PERTH); Saffrey, R.A. 61 (PERTH); Schock, F.M.C. 66 (PERTH); Smith, F.G. 1722 (PERTH); Stewart, W.S. 317 (PERTH); Talbot, L. H (PERTH 00181021); Tindale, M.D. 3914 (PERTH); Tindale, M.D. 132 & Maslin, B.R. (PERTH); Tindale, M.D. 133 & Maslin, B.R. (PERTH); Went, F.W. 154 (PERTH); Whibley, D.J.E. 4983 (PERTH); Wilson, E.H. & Halcut, D.A. s.n. (PERTH 00177709); Wilson, E.H. & Halcut, D.A. s.n. (PERTH 00455989); Wilson, P.G. 10236 (PERTH).

* *A. pulchella* var. ?

Burgman, M.A. 1266 & McNee, S. (*PERTH); Burgman, M.A. 1831 & McNee, S. (*PERTH); Keighery, G.J. 6699 (*PERTH); Serventy, D. s.n. (*PERTH 00175307).

A. pulchella var. ? *pulchella* x *reflexa*

Chapman, C. s.n. (PERTH 00175730); Maslin, B.R. 670 (PERTH); Smith, F.G. 1715 (PERTH).

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

A. pulchella var. *reflexa*
Blackall, W.E. s.n. (PERTH 00604623); Chapman, C. s.n. (PERTH 00174394); Chapman, C. s.n. (PERTH 00174866); Cumming, R.J. 872 (PERTH); Cumming, R.J. 877 (PERTH); Cumming, R.J. 882 (PERTH); Hopper, S.D. s.n. (PERTH 00174378); Gardner, C.A. s.n. (PERTH 00175269); Maslin, B.R. 2798 (PERTH); Maslin, B.R. 2799 (PERTH); Maslin, B.R. 3215 (PERTH); Maslin, B.R. 3216 (PERTH); Maslin, B.R. 3216A (PERTH); Maslin, B.R. 3216B (PERTH); Maslin, B.R. 3984 (PERTH); Smith, F.G. 1823 (PERTH); Souster, J. 445 (PERTH).

A. pulchella var. *subsessilis*
Allan, K.M. 878 (PERTH); Aplin, T.E.H., Lethbridge, I. & Coveny, R. 3194 (PERTH); Bansfield, L. 4 (PERTH); Maslin, B.R. 157 (PERTH); Maslin, B.R. 660 (PERTH); Maslin, B.R. 756 (PERTH); Maslin, B.R. 3253 (PERTH); Maslin, B.R. 3264 (PERTH); Maslin, B.R. 3469 (PERTH); Maslin, B.R. s.n. (PERTH 00177164); Newbey, K. 3736 (PERTH); Newbey, K. 5031 (PERTH); Newbey, K. 5532 (PERTH); Newbey, K. 9485-1 (PERTH); Newbey, K. 9498-1 (PERTH); Parkin, E. s.n. (PERTH 00177199); Royce, R.D. 3685 (PERTH); Tindale, M.D. 116 & Bennett, E.M. (PERTH).

A. schinoides
Beenher, J. s.n. (NSW); Blakely, W.F. (NSW 47377); Constable, E.F. 4285 (PERTH); Constable, E.F. 5972 (PERTH); Constable, E.F. s.n., 23 Aug. 1949 (NSW); Constable, E.F. s.n., Nov. 1965 (NSW); Coveny, R. 257 (NSW); Coveny, R. 5863 (NSW); Coveny, R. s.n., Nov. 1965 (NSW); Coveny, R. s.n., 12 Mar. 1966 (NSW); Hind, P. 901 (NSW); Irby, L.G. s.n., Dec. 1911 (NSW); Laseron, C.F. s.n., Feb. 1924 (NSW); Lawler, L.J. s.n., 3 Jan. 1979 (NSW); per Ryde School of Hort. s.n., Oct. 1977 (NSW); Power, G.J. s.n., 11 Mar. 1975 (NSW); Story, R. 6709 (NSW); Welch, M.B. s.n., Feb. 1925 (NSW); NSW 47373; NSW 47375; NSW 47376; NSW 48123; NSW 60037; NSW 60038; NSW 60046; NSW 65349; NSW 78937; NSW 89952; NSW 91605; NSW 97781.

A. silvestris
Constable, E.F. 5454 (NSW); Wimbush, D.J. 33 - Sept. 1971 (NSW); NSW 21676; NSW 26674; NSW 26676; NSW 52197; NSW 53778; NSW 72141; NSW 82509.

A. spectabilis
Burgess, C. s.n., 10 Oct. 1975 (NSW); Coveny, R. 9549 (NSW); Cunningham, G.M. & Milthorpe, P.L. 2995 (NSW); Debenham, C. s.n., Sept. 1963 (NSW); Newman, I.V. 422 (NSW); Newman, I.V. 434 (NSW); Newman, I.V. 439 (NSW); Newman, I.V. 471 (NSW); NSW 60560; NSW 60561; NSW 65823; NSW 101291; NSW 101332; NSW 101367; NSW 132548.

A. storyi
Armitage, I. 1400 (NSW); Gittins, C.H. s.n., Aug. 1964 (NSW); Henderson, R.J. & Sharpe, P. s.n., 20 Apr. 1971 (NSW); Johnson, L.A.S. s.n., 29 Aug. 1968 (NSW).

A. terminalis
Blaxell, D.F. 1328a (NSW); Moxon, K. 76/5 (NSW); NSW 48881; NSW 48883; NSW 48884; NSW 60156; NSW 82135.

A. terminalis subsp. A
Althofer, G. s.n., Sept. 1972 (NSW); Blaxell, D.F. 1755 (NSW); CANB 014482 (NSW); Cedanns, L.G. 793 (NSW); Constable, E.F. 7427 (NSW); Coveny, R. 6222 (NSW); Pickard, J. 266 (NSW); Story, R. 7868 (NSW); NSW 11510; NSW 42382; NSW 50511; NSW 53879; NSW 56940; NSW 60175; NSW 60179; NSW 77712.

A. terminalis subsp. B
Filson, R. 3900 (NSW); NSW 48882; NSW 51290; NSW 57880; NSW 60074; NSW 60078; NSW 60084; NSW 61047; NSW 77699; NSW 82296; NSW 89395.

A. terminalis subsp. C
CANB 046029 (NSW); Coveny, R. 10202 (NSW); Fox, M. 7907028 (NSW); NSW 55281; NSW 56753; NSW 64670.

A. terminalis subsp. D
Althofer s.n., Sept. 1972 (NSW); Johnson, L.A.S. s.n., 3 Oct. 1948 (NSW); Newman, I.V. 414 (NSW); NSW 59107; NSW 60123; NSW 66328; NSW 77727.

A. terminalis subsp. E
Coveny, R. 4108 (NSW).

A. terminalis subsp. F
Coveny, R. 4977 (NSW); Coveny, R. 5000 (NSW); Newman, I.V. 563 (NSW); NSW 55280; NSW 60161; NSW 60169.

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

A. trachyphloia
Baker, R.T. s.n., May 1910 (NSW); Constable, E.F. s.n. (NSW 55299); NSW 8363; NSW 42199; NSW 43088; NSW 47363; NSW 53897; NSW 82858; NSW 93533; NSW 97078; NSW 103900; NSW 107058.

A. sp. nov. 1 (section *Botrycephalae*)
Dawson, C. s.n. (NSW 148802); Dawson, C. s.n., 7 Jan. 1976 (NSW); Floyd, A.G. 1627 (NSW); Floyd, A.G. 1644; Floyd, A.G. s.n. (NSW 108451); Floyd, A.G. s.n., 18 Feb. 1976 (NSW); Morris, G. s.n., 1 May 1981 (NSW).

A. sp. nov. 2 (section *Botrycephalae*)
Blagg, J. s.n., June 1982 (NSW); Boland, D.J. 1888 (NSW); Cole, E.G. 1474 (NSW); Cope, P. s.n., 1 July 1982 (NSW); Gunn, B.V. 621 (NSW); Thomson, L. LXT118 (NSW).

A. sp. nov. 3 (section *Botrycephalae*)
Hitchcock, P. D12 (NSW); McRae, R. s.n., 30 Aug. 1980 (NSW); Tame, T.M. 487 (NSW); Turner, T. s.n., July 1984 (NSW).

Aenictophyton reconditum
Davis, G. 120 (PERTH); George, A.S. 14787 (PERTH).

Austrodolichos errabundus
Beard, J.S. 8468 (PERTH); Keighery, G.J. 4765 (PERTH); Kenneally, K.F. 6598 (PERTH); Kenneally, K.F. 7053 (PERTH); Kenneally, K.F. 7979 (PERTH); Kenneally, K.F. 8051 (PERTH).

Bossiaea aquifolium
Hamilton, R. & M. 33 (PERTH); Royce, R.D. 5114 (PERTH); Strid, A. 21516 (PERTH).

B. bossiaeoides
Evans, M. 11 (PERTH); Kenneally, K.F. s.n. (PERTH 00456268); Wilson, P.G. 11441 (PERTH).

B. concinna
Bennett, E.M. 633 (PERTH); Corrick, M.G. 8265 (PERTH).

B. dentata
George, A.S. 7458 (PERTH); Keighery, G.J. 855 (PERTH); Wittwer, E. W1195 (PERTH).

B. disticha
Ashby, A.M. 2362 (PERTH); Gardner, C.A. 5613 (PERTH); Lullfitz, F. 2060 (PERTH).

B. divaricata
Newbey, K. 404 (PERTH).

B. eriocarpa
Aplin, T.E.H. 6550 (PERTH); Beard, J.S. 7874 (PERTH); Burbidge, N.T. 2521 (PERTH); Griffin, E.A. 931 (PERTH); Lange, R.T. 36 (PERTH).

B. laidlawiana
Hamilton, R. & M. 37a (PERTH); Norris, N.F. 990 (PERTH); Sands, V.E. 638.12.6 (PERTH); Willis, J.H. s.n. (PERTH 00456276).

B. linophylla
Fairall, A.R. 878 (PERTH); Haegi, L. 2504 and Short, P.S. (PERTH); Koch, J. CJK2 (PERTH); Newbey, K. 850 (PERTH); Newbey, K. 1332 (PERTH).

B. ornata
Aplin, T.E.H. 204 (PERTH); Nelson, E.C. ANU17185 (PERTH); Strid, A. 20382 (PERTH); Strid, A. 21506 (PERTH); Whibley, D.J.E. 5062 (PERTH).

B. peduncularis
Goss, O.M. s.n. (PERTH 00456284); Koch, J.M. N24 (PERTH); Wilson, P. 3381 (PERTH).

B. preissii
Blackall, W.E. and Gardner, C.A. 2166 (PERTH); Newbey, K. 273 (PERTH); Turner, B.L. 5537 (PERTH).

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

B. pulchella
Crisp, M.D. 5387 (PERTH); Johnson, D.P. LL001 (PERTH); Lange, R.T. 267 (PERTH); Sands, V.E. 637.4.17 (PERTH); Seabrook, J. 147 (PERTH).

B. spinescens
Burns, A.C. 4 (PERTH); Keighery, G.J. 5375 (PERTH); Lullfitz, F. s.n. (PERTH 00456292).

B. spinosa
Beard, J.S. 7897 (PERTH); Cranfield, R.J. 3063 (PERTH); Cranfield, R.J. 4004 (PERTH).

B. strigillosa
Gardner, C.A. 13751 (PERTH).

B. webbii
Jackson, S.W. s.n. (PERTH 00456306); Lange, R.T. 249 (PERTH).

* *Canavalia papuana*
George, A.S. 12277 (PERTH); Hnatiuk, R.J. MP78 (PERTH); Kenneally, K.F. 6387 (PERTH); Kenneally, K.F. 8092 (*PERTH); Wilson, P.G. s.n. (PERTH 00456365).

C. rosea
Beard, J.S. 8276 (PERTH); Gardner, C.A. 10383 (PERTH); Kenneally, K.F. 6042 (PERTH); Kenneally, K.F. 9217 (PERTH); Leutert, W. 6 (PERTH).

* *Erythrina vespertilio*
Batini, F. s.n. (PERTH 00456330); Gardner, C.A. 1511 (PERTH); George, A.S. 1119 (PERTH); Keighery, G.J. 715 (*PERTH); Newbey, K. 10444 (*PERTH).

Galactia tenuifolia
Hutchinson, J.N. 6 (PERTH); Kenneally, K.F. 7980 (PERTH); Langfield, E. 381 (PERTH); Lewis, J. 45 (PERTH); Maslin, B.R. 5138 (PERTH).

Glycine canescens
Aplin, T.E.H. 3228 (PERTH); Brockway, G.E. s.n. (PERTH 00456381); Gardner, C.A. s.n. (PERTH 00456403); Green, J.W. 1412 (PERTH); Humphries, A.W. s.n. (PERTH 00456373).

G. clandestina
Blockley, J.V. 676 (PERTH); Newbey, K. 6902 (PERTH); Royce, R.D. 3502 (PERTH); Speck, N.H. 583 (PERTH); Wittwer W1737 (PERTH).

G. tabacina
Aplin, T.E.H. 2510 (PERTH); Burns, A.C. 34 (PERTH); Demarz, H. 3866 (PERTH); Glennon, P. 93 (PERTH); Mitchell, A.A. 1196 (PERTH).

G. tomentella
George, A.S. 939 (PERTH); Saxon, E.C. s.n. (PERTH 00456411).

* *Goodia lotifolia*
Allan, K.M. 362 (*PERTH); Butler, H. s.n. (PERTH 00456047); Donner, N.N. 2914 (PERTH); Elliott, H.G. s.n. (PERTH 00456020); Gardner, C.A. & Blackall, W.E. s.n. (PERTH 00456071); Keighery, G.J. 5478 (*PERTH); Maiden, J.H. s.n. (*PERTH 00456063); Mullan, E.J. s.n. (PERTH 00456039); Newbey, K. 334 (PERTH); Newbey, K. 7618 (*PERTH); Paust, S. 786 (PERTH); Royce, R.D. 9142 (*PERTH); Steedman, H. s.n. (PERTH 00456055); Steedman, H. s.n. (PERTH 00456098).

Hardenbergia comptoniana
Foreman, D. 378a (PERTH); James, A.M. 220 (PERTH); Keighery, G.J. 3364 (PERTH); Parker, H.J. s.n. (PERTH 00456500); Went, F.W. 48 (PERTH).

Hovea acanthoclada
Gardner, C.A. 9226 (PERTH); Royce, R.D. 3651 (PERTH).

H. chorizemifolia
Hamilton, R. & M. 1a (PERTH).

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

H. elliptica
Crisp, M.D. 6102, Taylor, J. and Jackson, R. (PERTH); Jackson, S.W. s.n. (PERTH 00456233).

H. pungens
Coveny, R. 7994 and Maslin, B.R. (PERTH); Helms, R. s.n. (PERTH 00456241); Smith, B.H. 243 (PERTH).

H. stricta
Blackall, W.E. 3964 (PERTH); Gardner, C.A. 9028 (PERTH); Hartley, T.G. 13973 (PERTH).

H. trisperma
Gardner, C.A. 6485 (PERTH); Hamilton, R. & M. 5 (PERTH); Saffrey, R.A. 134 (PERTH).

Kennedia beckxiana
Aplin, T.E.H. 2614 (PERTH); Eichler, Hj. 20069 (PERTH); George, A.S. 2177 (PERTH); Royce, R.D. 10039 (PERTH); Strid, A. 21251 (PERTH).

K. carinata
Aplin, T.E.H. 1369 (PERTH); Gardner, C.A. 946 (PERTH); Garraty, R. 3 (PERTH); George, A.S. 15775 (PERTH); Whibley, D.J.E. 5073 (PERTH).

K. coccinea
Demarz, H. 555 (PERTH); Demarz, H. D6677 (PERTH); Green, J.W. 523 (PERTH); Lange, R.T. 185 (PERTH); Royce, R.D. 8789 (PERTH).

K. eximia
Burgman, M.A. and McNee, S. MAB2038 (PERTH); Foreman, D. 355 (PERTH); Gardner, C.A. and Blackall, W.E. s.n. (PERTH 00456438); Nelson, E.C. ANU16478 (PERTH); Sands, V.E. 638-16-1 (PERTH).

K. glabrata
Beard, J.S. 5778 (PERTH); Coughran, R.A. s.n. (PERTH 00456446); George, A.S. 3214 (PERTH); George, A.S. 14379 (PERTH).

K. macrophylla
Cammilleri, M.G. s.n. (PERTH 00456462); Gardner, C.A. s.n. (PERTH 00456470); Garraty, R. 23 (PERTH); Watson s.n. (PERTH 00456454).

K. microphylla
Gardner, C.A. 6519 (PERTH); Halford, D. 801040 (PERTH); Newbey, K. 2617 (PERTH); Newbey, K. 5115 (PERTH); Mann, P. s.n. (PERTH 00456489).

K. nigricans
Gardner, C.A. 6603 (PERTH); Halliday, T.A. 304 (PERTH); Royce, R.D. 3660 (PERTH); Story, R. 8271 (PERTH); Strid, A. 20937 (PERTH).

K. prorepens
Beard, J.S. 4833 (PERTH); Boswell, P. R68 (PERTH); Chinnock, R.J. 887 (PERTH); Eichler, Hj. 20047 (PERTH); Weber, J.Z. 4820 (PERTH).

K. prostrata
Anway, J.C. 211 (PERTH); Coleby-Williams, J. 408 (PERTH); Cranfield, R.J. R68 (PERTH); Royce, R.D. 3758 (PERTH); Saffrey, R.A. 117 (PERTH).

K. stirlingii
Cranfield, R.J. 1328/80 (PERTH); Cranfield, R.J. 4150 (PERTH); Hamilton, R. & M. 10 (PERTH); Lange, R.T. 203 (PERTH); McCallum, H.V. s.n. (PERTH 00456497).

* *Lotus australis*
Aplin, T.E.H. 3338 (*PERTH); Aplin, T.E.H. 3418 (PERTH); Ashby, A.M. 5232 (*PERTH); Beard, J.S. 2944 (PERTH); Beauglehole, A.C. ACB11121 (PERTH); Bellairs, D. & B. 1408 (*PERTH); Berston, J.D. 5 (PERTH); Buckley, R. 6881 (*PERTH); Burns, A.C. 40 (PERTH); Crawford, A. s.n. (PERTH 00456101); Demarz, H. D7714 (*PERTH); Fitzgerald,

Appendix 1 (continued). Herbarium specimens of some Australian species of Acacia and Papilionoideae tested for cyanogenic glycosides

W.V. 819 (*PERTH); Gardner, C.A. 12663 (*PERTH); George, A.S. 1405 (PERTH); Grasby, J.C. 510 (PERTH); Humphries, A.W. s.n. (*PERTH 00456128); Lynch, C.M. 153 (PERTH); McGuire 26 (PERTH); Mitchell, A.A. 588 (*PERTH); Royce, R.D. 8008 (PERTH); Speck, N.H. 682 (*PERTH); Walker, K. KW205 (*PERTH).

* *L. cruentus*

Aplin, T.E.H. 2511 (PERTH); Beard, J.S. 3476 (PERTH); Beard, J.S. 7074 (PERTH); Beauglehole, A.C. ACB11683 (PERTH); Beauglehole, A.C. ACB11711 (PERTH); Blair, R. s.n. (*PERTH 00456152); Brooker, M.G. 3643 (*PERTH); Burbidge, N.T. 1586 (*PERTH); Davis, G. 81 (PERTH); Davis, G. 113 (*PERTH); Demarz, H. 3844 (PERTH); Demarz, H. 4426 (*PERTH); Demarz, H. 8468 (*PERTH); Demarz, H. 10296 (*PERTH); Edwards, S.H. s.n. (PERTH 00456144); Foreman, J. 6 (*PERTH); Gardner, C.A. 2559 (PERTH); Gardner, C.A. 3166 (*PERTH); Gardner, C.A. 3240 (PERTH); Gardner, C.A. 6138 (*PERTH); Gardner, C.A. 6173 (PERTH); Gardner, C.A. s.n. (*PERTH 00456179); George, A.S. 953 (PERTH); George, A.S. 1405 (PERTH); George, A.S. 1449 (*PERTH); George, A.S. 11390 (PERTH); George, A.S. 12118 (*PERTH); Keighery, G.J. 5110 (*PERTH); Lawson, J.A. s.n. (*PERTH 00456160); Linto, A.C. 15 (*PERTH); McCrumm 19 (*PERTH); McCrumm, E. s.n. (*PERTH 00456195); O'Shaughnessy, E.H. s.n. (*PERTH 00456217); Prowse, E.W. s.n. (*PERTH 00456187); Royce, R.D. 1726 (*PERTH); Speck, N.H. 1444 (*PERTH); Symon, D.E. 2317 (*PERTH); Wilcox, D.G. s.n. (*PERTH 00456209).

Mucuna gigantea

Lullfitz, F. and MacKenzie, D.A. s.n. (PERTH 00456349).

M. reptans

Dunlop, C.R. 5328 (PERTH); Keighery, G.J. 2643 (PERTH); Saxon, E.C. s.n. (PERTH 00456357).

Muelleranthus stipularis

George, A.S. 3902 (PERTH); George, A.S. 8408 (PERTH); Maconochie, J. 1388 (PERTH).

M. trifoliolatus

Goodall, D.W. 3076 (PERTH); Humphries, A.W. s.n. (PERTH 00456314); Main, A.R. s.n. (PERTH 00456322).

Plagiocarpus axillaris

George, A.S. 13648 (PERTH); George, A.S. 13755 (PERTH); George, A.S. 13861 (PERTH); George, A.S. 14103 (PERTH); Kenneally, K.F. 4450 (PERTH).

Ptychosema pusillum

George, A.S. 11153 (PERTH).

Templetonia aculeata

Cranfield, R.J. 2389 (PERTH); Donner, N.N. 4541 (PERTH); Strid, A. 20325 (PERTH).

T. biloba

Cranfield, R.J. R28 (PERTH); Cranfield, R.J. 2864 (PERTH); Demarz, H. 3279 (PERTH); Seabrook, J. 29 (PERTH).

T. drummondii

Andrews, C. s.n. (PERTH 00456225); George, A.S. 9231 (PERTH); Royce, R.D. 3838 (PERTH).

T. hookeri

Blackwell, M.I. BB101 (PERTH); Burbidge, N.T. 813 (PERTH); Hartley, T.G. 14650 (PERTH).

T. incana

Beard, J.S. 4888 (PERTH); George, A.S. 14730 (PERTH); Palmer, K. 22 (PERTH).

T. neglecta

George, A.S. 7236 (PERTH); Newbey, K. 2843 (PERTH); Wittwer, E. 412 (PERTH).

T. retusa

Donner, N.N. 2710 (PERTH); Newbey, K. 259 (PERTH); Turner, B.L. 5548 (PERTH).

Vigna lanceolata

Beard, J.S. 8375 (PERTH); Gardner, C.A. s.n. (PERTH 00463361); George, A.S. 10751 (PERTH); Kenneally, K.F. 9100 (PERTH); Royce, R.D. 7388 (PERTH); Saxon, E.C. s.n. (PERTH 00463353).

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Collections of fungi from Christmas Island, Indian Ocean

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Abstract

Shivas, R.G. and Hilton, R.N. Collections of fungi from Christmas Island, Indian Ocean. Kingia: 1(3) 295-301 (1990). One hundred and twenty fungal taxa are listed for Christmas Island. Fifty-eight of these are new records for Christmas Island. Three plant pathogenic fungi, *Guignardia bidwellii*, *Puccinia claoxyli* and *Uredo musae*, have not been previously collected from Australian territory.

Introduction

The main collection discussed in this paper is that made by one of us (R.G.S.) on a one-week visit to Christmas Island during August, 1986. The weather had been dry prior to the visit so that it had favoured agarics as against polypores. New collections cannot be considered in isolation and reference is made to all known past collections. These fungal collections listed here as made by others are those of J.J. Lister in 1887 (Hemsley 1890, identifications by M.C. Cooke), C.W. Andrews in 1897-8 (Blackman 1900; Lister 1900), H.N. Ridley in 1904 (Ridley 1905, identifications by G. Massee), and D.A. Powell in 1968 (Reid 1969). There must also have been another collection, as yet undocumented, upon which the determinations of the fungi depicted in the April, 1984 issue of postage stamps from Christmas Island were based. As part of the area covered by Flora Malesiana, Christmas Island collectors are listed in Volume I of the Flora (Van Steenis-Kruseman 1950).

The systematic arrangement follows that of Ainsworth *et al.* (1973) and is not taken below ordinal level. The collection has been lodged at the Western Australian Herbarium (PERTH).

Fungi recorded from Christmas Island.

Division Myxomycota
Class Myxomycetes
Order Ceratiomyxales

Ceratiomyxa descendens Emoto, on wood (PERTH 731943), by H. Yorkston, det. Mitchell.

Ceratiomyxa sphaerosperma Boedijn, on bark (PERTH 731935), by H. Yorkston.

Order Physarales

Erionema aureum Penzig, on bark (PERTH 733407), by H. Yorkston, det. Mitchell.

Order Liceales

Lycogala epidendrum (L.) Fr., Aldrich Hill (PERTH 730297a), by H. Yorkston, det. Reid; no special locality, as *Lycogala miniatum* Pers., by Andrews.

Order Trichiales

Arcyria cinerea (Bull.) Pers., on wood (PERTH 734047), by H. Yorkston.

Arcyria denudata (L.) Wetts., on bark (PERTH 798851), by H. Yorkston.

Arcyria flava Pers., no special locality, by Andrews. = *Arcyria nutans* (Bull.) Grev.

Arcyria obvelata (Oeder) Onsberg, on wood (PERTH 732451), by H. Yorkston.

Order Stemonitales

Stemonitis axifera (Bull.) Macbr., on bark (PERTH 732443), by H. Yorkston, det. Mitchell.

Stemonitis splendens Rost., on bark (PERTH 732907), by H. Yorkston; Flying Fish Cove and Phosphate Hill, as *S. splendens* var. *genuina*, by Andrews.

Division Eumycota

Sub-division Ascomycotina

Class Discomycetes

Order Helotiales

Marssonina rosae (Lib.) Died., leaf spot on *Rosa* hybrid, garden at Settlement (PERTH 835242).

Order Pezizales

Phillipsia domingensis Berk., featured on the 85c postage stamp.

Trichoscypha tricholoma Mont., no special locality, by Andrews. = *Cookeina tricholoma* (Mont.) O. Kuntze.

Class Loculoascomycetes

Order Dothideales

Guignardia bidwellii (Ellis) Viala & Ravaz, leaf spot on *Celastrus paniculatus* Willd., north-eastern coastal forest (IMI 310088, PERTH 736155). This collection is the first record from Australian territory of the pathogen that causes black rot of grapes. The record is curious as *G. bidwellii* is restricted to members of the Vitaceae (Sivanesan 1984) and *Celastrus* belongs to the Celastraceae.

Guignardia musae Racib., freckle disease on *Musa acuminata* Colla, north-eastern coast road (PERTH 834726).

Order Sphaeriales

Daldinia concentrica (Bolton) Ces. & de Not., National Park (PERTH 728683). Recorded by Ridley as common everywhere on dead wood, Phosphate Hill, Steep Point etc.

Daldinia eschscholtzia (Ehrenb.) Rehm, no special locality (D.A.P. 68), by Powell, det. Reid (1969).

Hypoxylon sp., Aldrich Hill (PERTH 814091), by H. Yorkston, det. Reid.

Rhopalopsis heliscus Mont., on dead wood Irvine Hall, by Ridley. = *Kretzschmaria heliscus* (Mont.) Massee. See Dennis (1957 p. 314, fig. 10).

Xylaria digitata Fr., Flying Fish Cove, by Ridley.

Xylaria fistulosa Lev., Phosphate Hill, by Ridley.

Xylaria hypoxylon Grev., Flying Fish Cove, Murray Hill Track, by Ridley.

Xylaria sp. 1, no special locality (PERTH 729280), by H. Yorkston.

Xylaria sp. 2, West White Beach, lower terrace forest (PERTH 728217).

Xylaria sp. 3, Aldrich Hill (PERTH 730289), by H. Yorkston.

Xylosphaera papyrifera (Fr.) Dennis, no special locality (D.A.P. 67), by Powell, det. Reid (1969).

Sub-division Basidiomycotina

Class Tetiomycetes

Order Uredinales

Puccinia arachidis Speg., leaf rust on *Arachis hypogaea* L., garden at Settlement (PERTH 835161).

Puccinia claoxyli Sydow & H. Sydow, leaf rust on *Claoxylon indicum* (Reinw. ex Blume) Hassk., one km south of airport (PERTH 835285).

Puccinia cymbopogonis Massee, leaf rust on *Cymbopogon citratus* (DC.) Stapf., garden at Poon San (PERTH 834742).

Puccinia ruelliae Sydow & H. Sydow, leaf rust on *Ruellia prostrata* Poir., entrance to golf course (PERTH 834653).

Uredo musae Cummins, leaf rust on *Musa acuminata* Colla, Grants Well (PERTH 834750). This collection is the first from Australian territory (Shivas 1987).

Uredo spp., leaf rust on *Bothriochloa bladhii* (Retz.) S.T. Blake, Central Plateau (PERTH 750921); leaf rust on *Digitaria radicosa* (Presl) Miq., edge of railway track (PERTH 750956); leaf rust on *Sporobolus fertilis* (Steudel) W. Clayton, 0.5 km north of airport (PERTH 834661).

Order Ustilaginales

Ustilago cynodontis (Pass.) P. Henn., smut on *Cynodon dactylon* (L.) Pers., entrance to golf course (PERTH 834688).

Class Hymenomycetes

Order Auriculariales

Auricularia mesenterica Pers., National Park (PERTH 728667); edge of railway track and adjacent rainforest (PERTH 727687); West White Beach, lower terrace forest (PERTH 726621); Plateau Forest (PERTH 728748); Aldrich Hill (PERTH 729736), by H. Yorkston.

Hirneola auriculae-judae Berk., no special locality, by Andrews. = *Auricularia auricula* (Hooker) Underwood. A northern temperate fungus likely to have been recorded in error.

Hirneola polytricha Mont., Flying Fish Cove, Plateau, recorded by Ridley (1905 p. 254) states "Common used as food by natives". = *Auricularia polytricha*, a well known edible abundant in New Zealand. There might be confusion with *Auricularia mesenterica* (above). As *Auricularia cfr. polytricha* (Mont.) Sacc., no special locality (D.A.P. 70) by Powell, det. Reid (1969).

Order Agaricales

Chaetocalathus semisupinus (Berk. & Br.) Pegl., lower terrace forest at West White Beach (PERTH 728195), det. Reid.

Dictyopanus luminescens Corner, on buttress root beneath wild pomelo tree, Camp 4 (PERTH 728233). Luminous.

Favolaschia thwaitesii (Berk. & Br.) Sing., lower terrace forest at West White Beach (PERTH 728209), det. Reid.

Favolus albidus Massee, Plateau at Irvine Hall, by Ridley, who states that it is "A small white agaric luminous at night". Ridley's statement (Ridley, 1905, p.252) that it is endemic and a new species is inconsistent with it being described by Massee from Klong Son, Thailand (Rostrup and Massee, 1902). Nor is the polypore genus *Favolus* appropriate for an agaric.

Flammula sapinea Fr., no special locality, by Ridley. = *Gymnopilus sapineus* (Fr.) R. Maire, but it is *G. purpuratus* (Cooke & Massee) Singer that has the violet cap described.

Lentinus lecomtei Fr., Murray Hill track, centre of Island, by Ridley as *L. lecontei*. Pegler (1983) equates *L. lecomtei* with *L. strigosus* (Schwein.) Fr.

Lentinus fulvus Berk., no special locality, by Ridley. Pegler (1983) equates *L. fulvus* with *L. velutinus* Fr.

Lentinus velutinus Fr., no special locality, by Ridley.

Lentinus sp. 1, West White Beach, lower terrace forest (PERTH 726591).

Lentinus sp. 2, National Park (PERTH 728705).

Lentinus sp. 3, no special locality (PERTH 729809), by H. Yorkston.

Leucocoprinus fragilissimus (Berk. & Rav.) Pat., This species is featured on the 30c postage stamp.

Marasmius crinisequi Mueller ex Kalchbrenner, no special locality (PERTH 730300), by H. Yorkston.

Marasmius sp. 1, Aldrich Hill (PERTH 731307), by H. Yorkston.

Marasmius sp. 2, Aldrich Hill (PERTH 729817), by H. Yorkston.

Mycena sp. 1, edge of railway track and adjacent rain-forest (PERTH 728136).

Mycena sp. 2, no special location (PERTH 730858), by H. Yorkston.

Naucoria sp., edge of mine site, newly cleared tall rainforest (PERTH 727636)

Pleurotus promethius Berk. & Curt., common on the Plateau, by Ridley. Eaten by inhabitants, which suggests affinity with *P. sajor- caju* (Fr.) Singer, which would be familiar to them from Malaya.

Pleurotus sp. 1, no special location (PERTH 730823), by H. Yorkston.

Pleurotus sp. 2, National Park (PERTH 730785), by H. Yorkston.

Trogia anthidepas (Berk. & Br.) Corner. This species is featured on the 45c postage stamp.

Volvaria haplotricnia Berk. & Br., Flying Fish Cove, by Ridley.

Order Aphyllophorales

Coriolopsis sp., edge of railway track and adjacent rain forest (PERTH 727083).

Coriolopsis brunneo-leuca (Berk.) Ryvarden, lower terrace forest at West White Beach lower terrace (PERTH 726613); hill near waterfall (PERTH 728764); Aldrich Hill (PERTH 730254) by H. Yorkston.

Coriolus zonatus (Fr.) Quel., edge of mine site and adjacent rain forest (PERTH 727164), det. Reid.

Daedalea subcongener Berk., Flying Fish Cove by Ridley. = *Trametes occidentalis* (Klotzsch) Fr. according to Cunningham (1965 p. 174).

Daedalea pavonina Berk., Phosphate Hill by Ridley. = *Trametes muelleri* Berk.,(K), see Cunningham (1965 p. 161).

Favolus boucheanus Klotzsch, no special locality, by Andrews. A *nomen dubium* according to Ryvarden and Johansen (1980).

Favolus caperatus Pat., no special locality (D.A.P. 133), by Powell, det. by Reid (1969) who comments "possibly a form of *F. brasiliensis* Fr."with tomentose surface at least near point of attachment.

Favolus tessulatus Berk. & Curt., Phosphate Hill, by Ridley.

Fomes lucidus Fr., Phosphate Hill, by Ridley. Also collected by Andrews. = *Ganoderma lucidum* (Fr.) Karst.

Ganoderma spp., Two species (D.A.P. 121) collected by Powell from no special locality were sent to Reid (1969) for specialist determination.

Ganoderma applanatum (Pers.) Pat., edge of mine site in newly cleared tall rain forest (PERTH 727180); National Park (PERTH 730327) young specimen by H. Yorkston; variety *brownii* was collected by both Andrews and Lister under the name *Fomes australis* Fr.

Gloeoporus thelephoroides (Hooker) G.H. Cunn., Waterfall - along track to main road (PERTH 726605); Dolly Beach (PERTH 727067); no special locality (PERTH 730831) by H. Yorkston.

Haddowia longipes (Lev.) Steyaert, no special locality, (D.A.P. 123) by Powell. Presumably the *Amauroderma (Polyporus) costatus* Lloyd said by Reid (1969) to be probably a new name for *Amauroderma longipes* (Mont.) Lloyd. This species is featured on the 55c stamp.

Hexagonia tenuis (Hooker) Fr., coastline at the Grotto (PERTH 726656); National Park (PERTH 730343), by H. Yorkston; Phosphate Hill, Murray Hill road, as *Hexagonia similis* Berk., by Blackman; no special locality, as *Hexagonia polygramma* Mont., by Andrews; no special locality (D.A.P. 132) det. as *Hexagonia thwaitesii* Berk. & Curtis by Reid (1969).

Hydnum concrescens Fr., edge of railway track and adjacent rain-forest (PERTH 727156); coastline at the Grotto (PERTH 727660); no special locality, by Ridley.

Lachnocladium furcellatum Sw., no special locality, by Ridley. Corner (1950, p. 425) gives the name *L. furcellatum* (Fr.) Lev. as of no certain application.

Laschia caespitosa Berk, no special locality, by Andrews. = *Favolus caespitosus* Berk. See Saccardo's *Sylloge Fungorum* 6507.

Lenzites acuta Berk., no special locality (PERTH 730793), by H. Yorkston; no special locality, as *Daedalea tenuis* Berk., by Andrews.

Lenzites elegans (Fr.) Pat., lower terrace forest at West White Beach, (PERTH 726648).

Lenzites palisotii Fr., no special locality (D.A.P. 71) by Powell det. Reid (1969).

Lenzites platyphyllus Cooke., Waterfall, Phosphate Hill, by Ridley.

Microporus flabelliformis (Klotzsch) O. Kuntze, edge of railway track and adjacent rain forest (PERTH 727717); Warton Hill (PERTH 729299) by H. Yorkston. Common everywhere, Phosphate Hill, as *Polystictus flabelliformis* (Klotzsch) Cooke, by Andrews and by Ridley.

Microporus xanthopus (Fr.) Kuntze, edge of mine site, newly cleared tall rain forest (PERTH 727148); Warton Hill (PERTH 730262) by H. Yorkston. Common Phosphate Hill, as *Polystictus xanthopus* Fr., by Andrews and by Ridley.

Oxyporus cervino-gilvus (Jungh.) Ryvarden, National Park (PERTH 727598); no special locality (PERTH 729272), by H. Yorkston.

Phellinus conchatus (Pers. ex Fr.) Quel., Waterfall (PERTH 726664); no special locality, as *Fomes conchatus* (Pers. : Fr.) Gill, (K) by Lister at time of Andrews' visit.

Polyporus confluens Fr., no special locality, by Andrews.

Polyporus elegans Fr., lower terrace forest at West White Beach (PERTH 727601); no special locality (PERTH 730246), by H. Yorkston.

Polyporus subzonalis Cooke, Grevillea 17. Phosphate Hill, Murray Hill track, Flying Fish Cove, by Ridley. = *Trametes muelleri* Berk., see Cunningham (1965 p. 161).

Polyporus udus Jungh., lower terrace forest at West White Beach (PERTH 726575).

Polystictus brunneo-pictus Berk., Flying Fish Cove, by Ridley.

Polystictus luteo-olivaceus Berk. & Br., no special locality, by Andrews.

Polystictus occidentalis Klotzsch, Phosphate Hill, by Ridley. = *Trametes occidentalis* (Klotzsch) Fr. = *Coriolopsis occidentalis* (Klotzsch) Murrill = *Coriolopsis polyzona* (Pers.) Ryvarden.

Polystictus sanguineus Fr., Common. Flying Fish Cove, by Ridley. Also collected by Andrews. = *Pycnoporus sanguineus* (Fr.) Murrill.

Polystictus gaudichaudii (Lev.) Cooke., no special locality (D.A.P. 72), by Powell det. Reid (1969).

Poria chlorina Massee, Kew Bull. 1906 p. 93. TYPE. Considered by Lowe (1963) as very similar to and possibly a synonym of *Poria mellea* (Berk. & Br.) Cooke.

Rigidoporus lineatus (Pers.) Ryvarden, one km south of airport (PERTH 728772). This is the *Polyporus zonalis* Berk. important in plantation agriculture for its liability to be confused with the White Root Disease pathogen *Rigidoporus microporus* (Fr.) Van Overeem, the "*Fomes lignosus* " of Malayan rubber planters. Reid (1969) determined a specimen collected by Powell (D.A.P. 122) from no special locality as *Rigidoporus zonalis* (Berk.) Imazeki.

Schizophyllum commune Fr. ex Fr., East Coast (PERTH 728241); Phosphate Hill etc., by Ridley, also Andrews.

Scytinostroma (Stereum) duriusculum (Berk. & Br.) Donk, no special locality (D.A.P. 134), by Powell det. Reid (1969).

Stereum lobatum Fr., Grants Well (PERTH 728659); Phosphate Hill by Ridley, also collected by Lister; no special locality D.A.P. 73), by Powell det. Reid (1969) as *Stereum ostrea sensu lato* (= *S. lobatum* (Kunze ex Fr.)Fr.).

Stereum sp., West White Beach, lower terrace forest (PERTH 727628).

Order Dacrymycetales

Dacrymyces palmatus (Schw.) Lloyd, no special locality (PERTH 730769), by H. Yorkston, det. Reid; no special locality, as *Dacrymyces chrysospermus* Berk. & Curt. according to McNabb (1973 p. 495).

Guepinia sparassoides Kalchbrenner, no special locality, by Andrews.

Guepinia spathularia Fr., no special locality, by Ridley.

Class Gasteromycetes

Order Nidulariales

Cyathus montagnei Tulasne, National Park (PERTH 728675); no special locality, by Andrews.

Order Phallales

Phallus sp. 1, no special locality (PERTH 730874), by H. Yorkston.

Phallus sp. 2, National Park (PERTH 730351), by H. Yorkston.

Order Lycoperdales

Geastrum andrewsi Blackman. Blackman (1900) described and published this endemic, collected by Andrews.

Lycoperdon hiemale Bull., Smith Point, by Ridley.

Lycoperdon pyriforme L., Smith Point, by Ridley.

Radiigera asperata Reid, on rotten palm stump and remains of termite nest. Coll. D.A. Powell & H'ng Kim Chey. See Reid (1986 p. 437).

Radiigera termitaiicola Reid, on termite nest. Coll. D.A. Powell & H'ng Kim Chey. See Reid (1986 p. 435).

Form Class Hyphomycetes

Bipolaris maydis (Nisikado & Miyake) Shoem., leaf spot on *Saccharum officinarum* L., Central Plateau (PERTH 834238; IMI 310089).

Bipolaris sp., leaf spot on *Eleusine indica* (L.) Gaertner, along roadside at Settlement (IMI 310090, PERTH 729191). Does not match with any specimens held at Herbarium IMI (Sivanesan, C.A.B. International Mycological Institute, pers. comm.).

Cercospora sp., leaf spot on *Tithonia diversifolia* (Hemsley) A. Gray. Central Area Work Quarry (PERTH 834246).

Cercosporidium personatum (Berk. & Curt.) Deighton, leaf spot on *Arachis hypogaea* L., garden at Settlement (PERTH 834769).

Oidium spp., powdery mildew on *Cucurbita maxima* Duch, Grants Well (PERTH 835293); powdery mildew on *Chrysanthemum* sp., garden at Settlement (PERTH 835234); powdery mildew on *Psophocarpus tetragonolobus* (L.) DC., garden at Settlement (PERTH 835218); powdery mildew on *Physalis minima* L., roadside at Waterfall (PERTH 834696) powdery mildew on *Capsicum annum* L., market garden near Hanitch Hill (PERTH 835277); powdery mildew on *Euphorbia heterophylla* L., alongside north-west coast road (PERTH 834637); powdery mildew on *Lycopersicum esculentum* Mill., garden at Settlement (PERTH 835196); powdery mildew on *Euphorbia cyathophora* Murray, 0.5 km north of airport (PERTH 750891).

Pyricularia grisea Sacc., leaf spot on unidentified grass, roadside at Waterfall (IMI 310087).

Stilbum javanicum Henn., no special locality, by Andrews.

Form Class Coelomycetes

Colletotrichum gloeosporioides (Penz.) Sacc., leaf spot on *Deeringia amaranthoides* (Lam.) Merr., Central Area Work Quarry (IMI 310086); leaf spot on *Cenchrus brownii* Roemer & Schultes, edge of road at golf course (IMI 310148).

Macrophomina phaseolina (Tassi) Goid., pod spot on *Lablab purpureus* (L.) Sweet, Waterfall (PERTH 728721).

Sphaerellopsis filum (Biv.-Bern. ex Fr.) Sutton, hyperparasitic on *Uredo* sp. on *Digitaria radicosa* (Presl.) Miq., edge of railway track (PERTH 750948); hyperparasitic on *Uredo* sp. on *Bothriochloa bladhii* (Retz.) S.T. Blake, Central Plateau (PERTH 750913).

Discussion

Eighteen plant pathogenic fungi are listed. Three of these, *Guignardia bidwellii*, *Puccinia claoxyli* and *Uredo musae* have not been previously collected from Australian territory. *G. bidwellii* causes the serious disease black rot of grapevine and is of particular concern to the Australian plant quarantine service (Anon. 1982). It is not certain that the form of *G. bidwellii* recorded from Christmas Island has the ability to infect commercial grapevines (*Vitis* spp.) or other Vitaceae.

This paper presents the information available up to the end of 1986. More records should emerge from Kew Herbarium, and a recent valuable collection made by H. Yorkston has been lodged at the W.A. Herbarium and remains to be worked upon.

Evidence so far shows, as would be expected, that the mycoflora consists of Malesian as well as Australian components.

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The vascular flora of a part of the mallee region north of Esperance, Western Australia

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Abstract

Van der Moezel, Paul.G. The vascular flora of a part of the mallee region north of Esperance, Western Australia. Kingia 1(3):303-319(1990). A total of 344 vascular plant taxa are listed which were collected from Crown Land in a part of the mallee region north of Esperance, Western Australia. The three main families were Myrtaceae, Leguminosae and Proteaceae and the three main genera were *Acacia*, *Eucalyptus* and *Melaleuca*. Thirty-three taxa are listed as either rare, restricted or poorly known according to various authorities.

Introduction

Mallee communities in Australia occur across the southern part of the continent from Western Australia (longitude 117°E) to New South Wales (longitude 146°E) between latitudes 22°S and 37°S (Parsons 1981).

In contrast to the mallee regions of eastern Australia which have been widely surveyed since the late 1940's (Parsons 1981), the mallee regions of Western Australia have received little botanical attention. Beard (1973) produced broad scale (1:250 000) vegetation maps and descriptions of the mallee region as part of the vegetation survey of Western Australia, while Monk *et al.* (1979) and Crook and Burbidge (1982) produced descriptions of mallee vegetation on a much smaller scale. The vegetation of the Roe Botanical District which lies in the mallee region was surveyed by Burgman (1985). Newbey (1979) surveyed a large part of the coastal vegetation which includes some mallee vegetation.

The discovery of coal in the mallee region north of Esperance (Elms *et al.* 1982), led to a pre-mining survey of the vegetation and soils in one particular coal mining lease (van der Moezel 1985). This paper concerns the vascular plant collections made during that survey over the period 1982-1985.

Environment

The study area is situated north of Esperance, Western Australia (Figure 1). The area is roughly rectangular in shape, 45 km long by 10 km wide elongated in a north-south direction centred around latitude 33° 22'S and longitude 121° 50'E. The western boundary is about 10 km east of the Esperance Coolgardie Highway and is parallel to it (Figure 1). The total area is 442.6 km^2 of which 312.8 km^2 or 71.1% has been cleared for agricultural use.

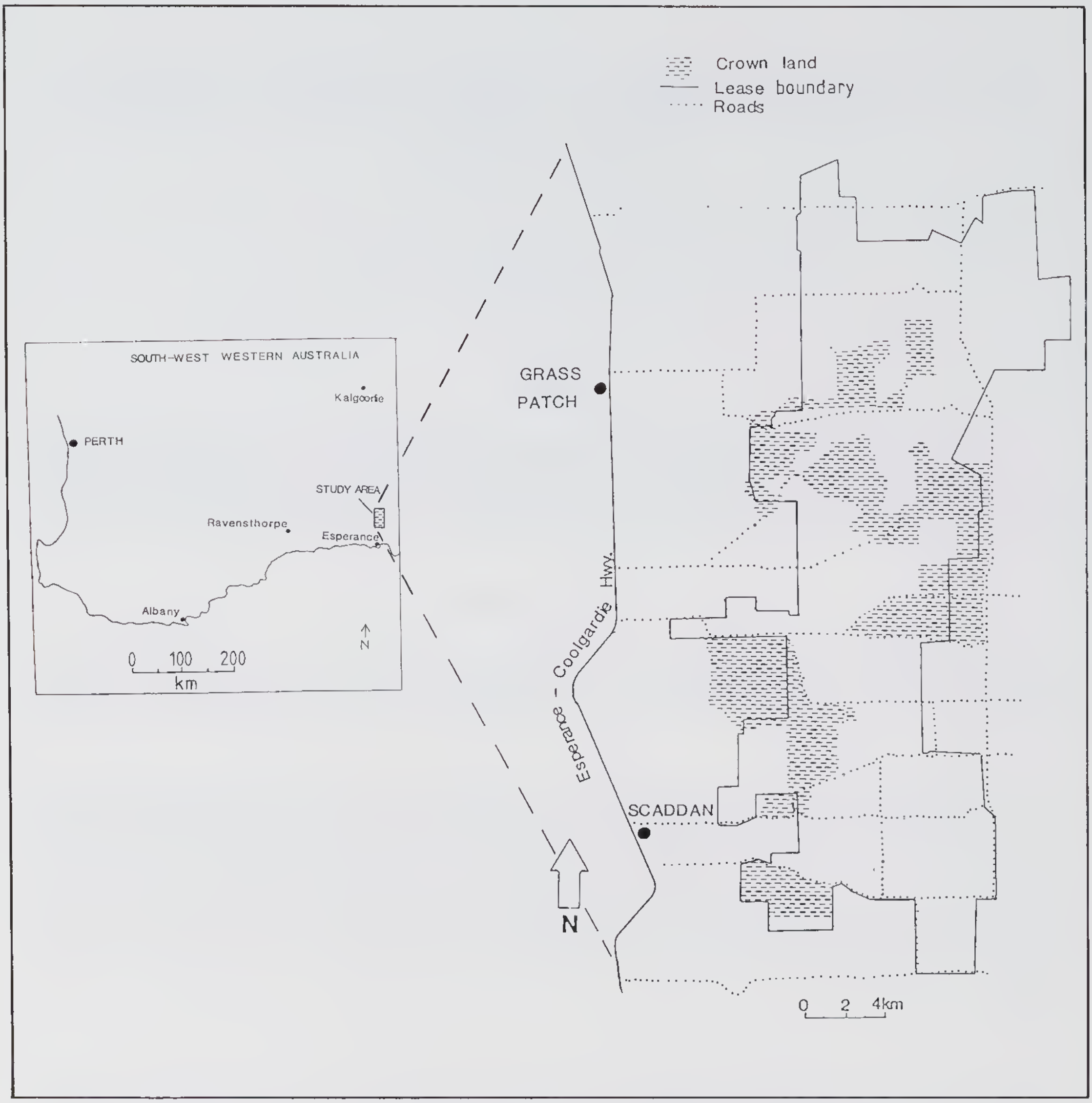

Figure 1. General location of the study area showing the coal mining lease, main tracks and extent of Crown Land

Climate

The climate of the study area can be broadly classified as Mediterranean (Köppen 1923), being influenced by an anticyclonic weather system which brings rain-bearing cold fronts in winter and causes hot, dry conditions during summer. The only two Bureau of Meteorology weather stations located near the study area are those at Scaddan and Grass Patch, both about 10 km west of the area. Average annual rainfall at Scaddan is 414 mm (Table 1) occurring mostly during May to August (48.1%) while the average annual rainfall at Grass Patch is 348 mm (May-August=46.0%).

Table 1. Rainfall data for Scaddan and Grass Patch

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
SCADDAN													
Mean Rainfall (mm)	17	20	24	32	48	52	50	49	41	36	26	19	414
Mean No. of rain days	3	3	4	6	9	10	11	10	8	7	5	3	71
GRASS PATCH													
Mean Rainfall (mm)	16	21	23	24	38	44	38	40	33	31	22	18	348
Mean No. of rain days	2	3	4	5	7	9	10	10	7	6	4	3	370

Physiographic features

Much of the area contains sets of longitudinal dunes which are usually associated with interdunal salt lakes. The vegetated dunes are mostly aligned on a west-east direction but some dunes are aligned along a west-north-west/east-south-east direction.

An extraordinarily large number of salt lakes and salt pans extend throughout the study area. The lakes vary from small circular lakes of less than one hectare in area to long thin lakes associated with the swales of the longitudinal dunes and also to large irregular shaped lakes. The lakes are usually dry during summer but contain a thin covering of water during winter. On the eastern side of most lakes are small crescent shaped dunes called lunettes.

Soils

The soils of the study area are described as being chiefly alkaline with a bleached A2 horizon and pedal subsoils (Dy 5.43) (Northcote *et al.* 1967). Other associated soils are grey-brown highly calcareous earths, leached sands, lunette soils and cracking grey clays. There are no rocky outcrops in the study area.

Vegetation

The study area is located in the South-West Botanical Province of Western Australia (Beard 1980). Within this Province, the area lies in the south-eastern section of the Roe Botanical District which is predominantly mallee vegetation. The southern part of the study area has vegetation which is characteristic of both the Roe Botanical District and the Eyre Botanical District which is located to the immediate south.

The types of vegetation formations present are extremely varied, ranging from Woodland to Mallee, Shrubland and Salt Complex formations (van der Moezel 1985). The main overstorey species in Woodland and Woodland/Mallee communities are *Eucalyptus eremophila, E. leptocalyx, E. gonikantha, E. uncinata* and *E. conglobata*. Mallee formations are dominated by *E. tragona* and *E. angulosa* which emerge over a dense sclerophyllous shrub stratum. Shrubland formations contain *Melaleuca* species particularly *M. halmaturorum* ssp. *cymbifolia* and *M. nesophila.* Salt Complex vegetation consists of halophytic species such as *Halosarcia syncarpa, Stipa eremophila* and *Atriplex vesicaria.*

Results

Floristics

The total flora recorded for the study area consisted of 344 taxa from 158 genera and 57 families (Appendix 1). Thirty (8.7%) taxa were not identified to species level. Of these 30 taxa, 4 are new undescribed species, 14 have affinities with known species while the remaining 12 were either unidentifiable or had no known close affinities. The genera *Acacia* and *Melaleuca* had the most number of unidentified taxa with 8 and 5 respectively. Only 9 species (2.6%) were recorded as introduced (species along roadsides and in cleared land were not sampled). Low colonisation by introduced species into Western Australian mallee communities has also been recorded by Newbey (1979) and Burgman (1985) with values of 1.4% and 2.6% respectively.

The five main families represented were Myrtaceae (71 taxa), Leguminosae (46 taxa), Proteaceae (33 taxa), Asteraceae (27 taxa) and Epacridaceae (19 taxa). The largest genera were *Melaleuca* (27 taxa), *Acacia* (25 taxa) and *Eucalyptus* (20 taxa) (Table 2). The three families Myrtaceae, Leguminosae and Proteaceae and the three genera *Acacia*, *Eucalyptus* and *Melaleuca* occur in the top three or four places of all species lists taken from mallee regions of Western Australia (Newbey 1979, Monk *et al.* 1979, Burgman 1985, this survey - Appendix 1).

Table 2. Major families and genera from the study area.

Family	No. of taxa	% of total taxa
Myrtaceae	71	20.7
Leguminosae	46	13.4
- Mimosoideae	25	7.3
- Papilionoideae	20	5.8
- Caesalpinoideae	1	0.3
Proteaceae	33	9.6
Asteraceae	27	7.8
Epacridaceae	19	5.5
Orchidaceae	12	3.5
Chenopodiaceae	11	3.2
Rutaceae	11	3.2
Poaceae	8	2.3
Others	106	31.2
Total	344	

Genus	No. of taxa	% of total taxa
Melaleuca	27	7.8
Acacia	25	7.3
Eucalyptus	20	5.8
Hakea	12	3.5
Leucopogon	10	2.9
Pultenaea	6	1.7

Conservation status

The species list contains 33 taxa (9.8%) which have been listed by either Leigh *et al.* (1981), Marchant and Keighery (1979), Rye and Hopper (1981), Patrick and Hopper (1982), Rye (1982) or Burgman (1985) as rare, restricted or poorly known (Table 3). This figure is likely to be higher since undescribed or recently described species are not included. A new species of the genus *Conostephium* (Epacridaceae) was described as a result of collections made during this research (van der Moezel 1987).

Table 3. Rare, restricted or poorly known taxa of the study area

Key to abbreviations and codes.

Conservation value:

LBH	(Leigh, Briggs and Hartley 1981)
1.	Species known only from type collection or from a single collection.
2.	Very restricted distribution in Australia and only with geographical range less than 100 km.
3.	Species with a range over 100 km but occurring only in small populations.
X.	Species presumed extinct.
E.	Endangered species in serious risk of disappearing from the wild state within one or two decades if present land use and other causal factors continue to operate.
V.	Vulnerable species not presently endangered but at risk over a longer period.
R.	Species which are rare in Australia but which are not currently considered endangered or vulnerable.
K.	Poorly known species that are suspected to belong to one of the above categories.
C.	Known to be represented within a National Park or other proclaimed reserve.

MK	(Marchant and Keighery 1979)
A.	Species not having any Western Australian collected material.
B.	Apparently rare and geographically restricted.
C.	Species known only from the type collection.
D.	Poorly known species, with less than 5 herbarium collections.
E.	Species with restricted distribution of less than 100 km.
F.	Species with distribution of less than 160 km.

The number refers to the number of specimens at PERTH in 1979.

RHP	(Rye and Hopper 1981, Rye 1982, Patrick and Hopper 1982)
X.	Known from only one locality.
VR.	Very rare. Less than one thousand reproductively mature plants in the wild.
R.	Rare. Less than a few thousand reproductively mature plants in the wild.
A.	Abundant. More than a few thousand reproductively mature plants in the wild.
G.	Gazetted as rare.
C.	Occurring on a conservation reserve.
P.	Known to have been propagated.

The number refers to approximate geographical range in km.

MB (Burgman 1985)

Codes used are the same as Leigh *et al.* (1981)

Table 3 (continued). Rare, restricted or poorly known taxa of the study area

Taxa	Conservation value			
	LBH	MK	RHP	MB
Colchicaceae				
Wurmbea sinora				3K
Juncaginaceae				
Triglochin muelleri	3K	-A		3K
Apiaceae				
Hydrocotyle rugulosa		3D		
Epacridaceae				
Andersonia macranthera	3K			3VC
Conostephium drummondii		4D		3RC
Conostephium uncinatum				2V
Lamiaceae				
Prostanthera microphylla ssp. *serpyllifolia*		2D		
Lauraceae				
Cassytha melantha		4D		
Leguminosae				
Mimosoideae				
Acacia crassuloides	2V			3V
Acacia glaucoptera	3RC	20F		
Acacia pachypoda		6F		
Acacia pritzeliana	3RC	14F		3RC
Acacia sorophylla		3D		3VC
Papilionoideae				
Bossiaea leptacantha		3D		
Oxylobium microphyllum		11F	145	
Pultenaea adunca		10F		
Myoporaceae				
Eremophila dichroantha		10B		
Myrtaceae				
Baeckea blacketii	2K			
Darwinia polycephala			X--	
Eucalyptus sp. aff. *angustissima*				3E
Eucalyptus forrestiana ssp. *forrestiana*	2VC			3RC
Eucalyptus gardneri	3RC			
Eucalyptus halophila				3VC
Eucalyptus merrickiae	3R			2V
Eucalyptus occidentalis	2RC			
Melaleuca cliffortioides	3RC	7F		3RC
Melaleuca nesophila		9E		
Proteaceae				
Adenanthos ileticos	2E		25RG	2E
Banksia blechnifolia	3VC			3RC
Dryandra ferruginea		20F		
Hakea brooksiana		6F	130CP	
Isopogon alcicornis		6B	160C	
Rhamnaceae				
Cryptandra polyclada	2RC	3D		

Physiognomy

Each of the 344 taxa was classified according to the life form categories of Newbey (1979) (Table 4). The system used by Newbey subdivides the primary life forms of Raunkiaer (1937) to allow for the vegetation classification of Muir (1977) and the life forms of the South-West Botanical Province. The dominant life forms were dwarf shrubs (30.5%), small shrubs (19.2%), annuals (10.2%) and medium shrubs (9.0%). These same four life forms in very similar proportions dominated the species list of Newbey (1979). Burgman (1985) however recorded almost 45% dwarf shrubs from the Roe Botanical District. This high dwarf shrub value was the result of sampling many heath communities. Heath vegetation was not prominent in this study area. In comparison to some New South Wales mallee communities (Wood 1929; Whittaker *et al.* 1979) the percentage of nanophanerophytes in the Western Australian mallee is much higher while the percentage of hemicryptophytes and therophytes is lower.

Table 4. Life form categories of taxa in the study area.

Life form		Taxa	%	Total %
MESOPHANEROPHYTES	Small trees 5-15 m	6	1.7	1.7
	Medium trees 15-30 m	-	-	
	Large trees > 30 m	-	-	
MICROPHANEROPHYTES	Dwarf trees < 5 m	2	0.6	11.0
	Tall shrubs > 2 m	22	6.4	
	Mallees - Tree form	8	2.3	
	- Shrub form	6	1.7	
NANOPHANEROPHYTES	Dwarf shrubs < 0.5 m	105	30.5	63.4
	Small shrubs 0.5-1.0 m	66	19.2	
	Medium shrubs 1.0-1.5 m	31	9.0	
	Large shrubs 1.5-2.0 m	12	3.5	
	Herbaceous shrubs	-	-	
	Climbers	4	1.2	
CHAMAEPHYTES	Mat plants	5	1.5	1.5
HEMICRYPTOPHYTES	Rosette perennials	3	0.9	6.4
	Perennial grasses	8	2.3	
	Colonial sedges	-	-	
	Tufted sedges	8	2.3	
	Sedge-like	3	0.9	
GEOPHYTES	Terrestrial geophytes	19	5.5	5.5
	Hydrophytes	-	-	
THEROPHYTES	Annual grasses	-	-	10.2
	Other annuals	35	10.2	
PARASITIC CLIMBERS	Parasitic climbers	1	0.3	0.3

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(*Acacia*), P.G. Wilson (Chenopodiaceae and Rutaceae), M.I. Brooker (*Eucalyptus*), T. Macfarlane (Monocots) M. Trudgen (*Baeckea*), B. Barlow (*Melaleuca*), J. Powell (Epacridaceae), L. Craven (*Calytrix*), R. Peakall, (Orchidaceae), K. Newbey, M. Burgman and E. Bennett (various).

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Appendix 1. Species list

The first three columns for each taxa gives the life form category. Abbreviations, according to Newbey (1979) and Burgman (1985) are as follows:

ST = Small Tree
DT = Dwarf Tree
MAT = Mallee - tree form
MAS = Mallee - shrub form
TS = Tall Shrub
LS = Large Shrub
MS = Medium Shrub
SS = Small Shrub
DS = Dwarf Shrub
CL = Climber
MP = Mat Plant
RP = Rosette Perennial
PG = Perennial Grass
SI = Tufted Sedge
SL = Sedge-like
AB = Terrestrial Geophyte
AS = Other Annuals
PC = Parasitic Climber

Numbers after the life form abbreviations refer to the collection numbers (PGV numbers). Specimens are lodged at the Western Australian Herbarium (PERTH). Known monthly flowering times have been noted where possible. Nomenclature follows Green (1985) except for Leguminosae, which is given family status. Introduced species are denoted by an asterisk.

PTERIDOPHYTA

Adiantaceae			
DS	53		*Cheilanthes austrotenuifolia* H. Quirk & T.C. Chambers

GYMNOSPERMAE

Cupressaceae			
TS	73		*Callitris preissii* Miq. ssp. *verrucosa* (Cunn. ex Vogel) J. Garden
TS	170		*Callitris roei* (Endl.) F. Muell.

ANGIOSPERMAE MONOCOTYLEDONAE

Anthericaceae			
AB	195	OCT	*Arthropodium capillipes* Endl.
DS	289	SEP	*Laxmannia brachyphylla* F. Muell. ex Benth.
CL		SEP-OCT	*Thysanotus patersonii* R.Br.
AB	256	DEC-JAN	*Thysanotus tenellus* Endl.
Asphodelaceae			
AB	408	SEP	*Bulbine semibarbata* (R.Br.) Haw.
Centrolepidaceae			
AS	481	SEP	*Centrolepis cephaloformis* Reader ssp. *cephaloformis*
Colchicaceae			
AB	473	SEP	*Wurmbea sinora* T.D. Macfarlane
Dasypogonaceae			
SL	80		*Lomandra collina* (R.Br.) Ewart
Cyperaceae			
SI	238		*Caustis dioica* R.Br.

Appendix 1 (continued). Species list

SI	328			*Chorizandra enodis* Nees
SI	46	MAR		*Lepidosperma pruinosum* Keuk. var. *rigidulum* Keuk.
SI	26			*Lepidosperma drummondii* Benth.
SI	279			*Schoenus asperocarpus* F. Muell.
Hypoxidaceae				
AB	434	SEP		*Hypoxis occidentalis* Benth.
Iridaceae				
SL				*Patersonia* sp. indet.
Juncaginaceae				
AS	476	SEP		*Triglochin muelleri* Buchenau
Orchidaceae				
AB	415	SEP		*Caladenia dilatata* R.Br. var. *falcata* (Nicholls) Clements & Hopper
AB	285	AUG-SEP		*Caladenia doutchae* O. Sarg.
AB	416	SEP		*Caladenia* sp. aff. *integra* E. Coleman
AB	284	SEP		*Caladenia longicauda* Lindley
AB	414	SEP		*Caladenia roei* Benth.
AB	100	AUG-SEP		*Caladenia saccharata* H.G. Reichb.
AB	412	SEP		*Microtis unifolia* (G. Forster) H.G. Reichb.
AB	105	AUG-SEP		*Pterostylis mutica* R.Br.
AB	184	AUG-SEP		*Pterostylis nana* R.Br.
AB	306	SEP		*Pterostylis sargentii* C. Andrews
AB	99	AUG		*Pterostylis vittata* Lindley
AB	204	SEP-OCT		*Thelymitra nuda* R.Br.
Phormiaceae				
SL	98			*Dianella revoluta* R.Br.
Poaceae				
PG	236	DEC		*Amphipogon strictus* R.Br.
PG	474	SEP	*	*Catapodium rigidum* (L.) C.E. Hubb.
PG	407	SEP	*	*Pentaschistis airoides* (Nees) Stapf
PG	435	SEP		*Poa drummondiana* Nees
PG	126	AUG-SEP		*Stipa eremophila* Reader
PG	428	SEP		*Stipa hemipogon* Benth.
PG	438	SEP	*	*Vulpia bromoides* (L.) Gray
PG	406	SEP	*	*Vulpia myuros* (L.) C. Gmelin
Restionaceae				
SI	137			*Leptocarpus humilis* Gilg
SI	283			*Loxocarya fasciculata* (R.Br.) Benth.
SI	79			*Restio sphacelatus* R.Br.
				ANGIOSPERMAE DICOTYLEDONAE
Aizoaceae				
MP	51	SEP	*	*Carpobrotus edulis* (L.) L. Bolus
MP		SEP		*Disphyma crassifolium* (L.) L. Bolus
MP	272		*	*Tetragonia decumbens* Miller
MP	275			*Tetragonia implexicoma* (Miq.) J.D. Hook.
Apiaceae				
AS	404	SEP		*Hydrocotyle rugulosa* Turcz.
DS	248			*Platysace effusa* (Turcz.) Norman
DS	365			*Platysace juncea* (Bunge) Norman
AS	199	SEP		*Trachymene cyanopetala* (F. Muell.) Benth.
AS	480	SEP		*Trachymene* sp. indet.

Appendix 1 (continued). Species list

Apocynaceae			
LS	67	JAN, MAY	*Alyxia buxifolia* R.Br.
Asteraceae			
AS	442	SEP	*Asteridea athrixioides* (Sonder & F. Muell.) G. Kroner
AS	426	SEP	*Blennospora drummondii* A. Gray
AS	317	FEB	*Brachycome ciliaris* (Labill.) Less.
AS	475	SEP	*Brachycome exilis* Sonder
AS		MAR,SEP	*Brachycome perpusilla* (Steetz) J. Black var. *tenella* (Turcz.) Davis
AS	479	SEP	*Chthonocephalus pseudevax* Steetz
AS	472	SEP	*Cotula cotuloides* (Steetz) Druce
SS	225	DEC-MAR	*Helichrysum blackallii* N. Burb.
DS	460	SEP	*Helichrysum obtusifolium* F. Muell. & Sonder ex Sonder var. *obtusifolium*
DS	419	SEP	*Helichrysum obtusifolium* F. Muell. & Sonder ex Sonder var. *tephrodes* Turcz.
AS	429	SEP	*Helipterum laeve* (A. Gray) Benth.
AS	425	SEP	*Helipterum manglesii* (Lindley) Benth.
AS	411	SEP	*Helipterum pygmaeum* (DC.) Benth. var. *occidentale* Benth.
AS	432	SEP	*Hyalochlamys globifera* (A. Gray)
AS	433	SEP	*Microseris scapigera* (Sol. ex Cunn.) Schultz-Bip.
AS	410	SEP	*Millotia myosotidifolia* (Benth.) Steetz
SS	43	SEP	*Olearia muelleri* (Sonder) Benth.
SS	94	MAY	*Olearia passerinoides* (Turcz.) Benth.
SS	202	SEP	*Olearia revoluta* F. Muell. ex Benth.
AS	409	SEP	*Podolepis tepperi* (F. Muell.) D.A. Cooke
AS	443	SEP	*Podotheca angustifolia* (Labill.) Less.
AS	437	SEP	*Scyphocoronis major* (Turcz.) Druce
AS	405	SEP	*Senecio glossanthus* (Sonder) Belcher
AS	431	SEP	*Siloxerus pygmaeus* (A. Gray) P.S. Short
AS	424	SEP	* *Ursinia anthemoides* (L.) Poiret
AS	207	OCT	*Waitzia acuminata* Steetz
AS	481	SEP	Asteraceae sp. indet.
Boraginaceae			
DS	226		*Halgania andromedifolia* Behr. & F. Muell.
DS	293	SEP	*Halgania rigida* S. Moore
Brassicaceae			
AS	477	SEP	* *Hymenolobus procumbens* (L.) Nutt. ex Schinz & Thell.
AS	482	SEP	*Lepidium phlebopetalum* (F. Muell.) F. Muell.
Campanulaceae			
AS	470	SEP	*Wahlenbergia gracilenta* Loth.
Casuarinaceae			
LS			*Allocasuarina campestris* (Diels) L. Johnson
SS			*Allocasuarina humilis* (Otto & Dietr.) L. Johnson
DS	345		*Allocasuarina thuyoides* (Miq.) L. Johnson
Chenopodiaceae			
SS	252	MAR	*Atriplex vesicaria* Heward ex Benth.
DS	50		*Enchylaena tomentosa* R.Br.
DS	55		*Halosarcia halocnemoides* (Nees) Paul G. Wilson ssp. *catenulata* Paul G. Wilson
DS	20	SEP	*Halosarcia lylei* (Ewart & J. White) Paul G. Wilson
DS	49	SEP	*Halosarcia syncarpa* Paul G. Wilson
DS	124		*Halosarcia* sp. indet.
DS	21	SEP	*Halosarcia* sp. nov.
DS	48		*Maireana oppositifolia* (F. Muell.) Paul G. Wilson
SS	259		*Rhagodia baccata* (Labill.) Moq.
DS	57		*Rhagodia crassifolia* R.Br.
MP	47		*Tegicornia uniflora* Paul G. Wilson x *Halosarcia* sp.

Appendix 1 (continued). Species list

Crassulaceae			
AS	436	SEP	*Crassula colorata* (Nees) Ostenf.
Dilleniaceae			
DS	97	JUL-SEP	*Hibbertia gracilipes* Benth.
DS		MAR,SEP	*Hibbertia hypericoides* (DC.) Benth.
SS	72	MAY-SEP	*Hibbertia pungens* Benth.
Droseraceae			
AB	427	SEP	*Drosera glanduligera* Lehm.
AB	363		*Drosera macrantha* Endl.
Epacridaceae			
DS	241	JUL-SEP	*Andersonia macranthera* F. Muell.
DS	449	SEP	*Astroloma* sp. aff. *conostephioides*
DS	191		*Brachyloma concolor* (F. Muell.) C. Gardner
SS	246		*Conostephium drummondii* (Stschegl.) C. Gardner
SS	83		*Conostephium marchantiorum* Strid
SS	213		*Conostephium uncinatum* Moezel
DS	118	MAR,AUG	*Leucopogon capitellatus* DC.
DS	117	JAN-MAR	*Leucopogon crassifolius* Sonder
DS			*Leucopogon cuneifolius* Stschegl.
SS	258	DEC-MAR	*Leucopogon dielsianus* E. Pritzel
SS	174	AUG-SEP	*Leucopogon fimbriatus* Stschegl.
SS	464	SEP	*Leucopoon flavescens* Sonder var. *brevifolius* Benth.
MS	28	MAY	*Leucopogon insularis* Cunn. ex DC.
MS	40	MAR-JUL	*Leucopogon rubicundus* F. Muell. ex Benth.
DS	215	AUG	*Leucopogon* sp. indet.
DS	218	JUL	*Leucopogon* sp. indet.
SS		SEP	*Lysinema ciliatum* R.Br.
DS	290	SEP	*Monotoca tamariscina* F. Muell.
DS	323		*Styphelia hainesii* F. Muell.
Euphorbiaceae			
DS	336		*Bertya dimerostigma* F. Muell.
SS	70		*Beyeria lechenaultii* (DC.) Baillon
SS	16	DEC	*Monotaxis luteiflora* F. Muell.
Frankeniaceae			
DS	123	JAN,AUG	*Frankenia brachyphylla* Summerh.
DS	22		*Frankenia decurrens* Summerh.
Goodeniaceae			
DS	45	JAN,AUG	*Coopernookia strophiolata* (F. Muell.) Carolin
DS			*Dampiera lavandulacea* Lindley
DS	134	AUG-SEP	*Dampiera stenophylla* Krause
RP	292	SEP	*Goodenia affinis* Vriese
RP	242	DEC	*Goodenia laevis* Benth.
DS	157	MAY-SEP	*Lechenaultia formosa* R.Br. var. *oblata* (Sweet) Pritzel
DS	240	DEC	*Scaevola restiacea* Benth.
Gyrostemonaceae			
MS	267		*Gyrostemon ramulosus* Desf.
TS	440	SEP	*Gyrostemon subnudus* (Nees) Baillon
Haloragaceae			
DS	138	JAN-MAR	*Glischrocaryon flavescens* (J. Drumm. ex Hook.) Orch.
Lamiaceae			
SS	265	MAR-SEP	*Microcorys glabra* (Bartling) Benth.

Appendix 1 (continued). Species list

DS	193	SEP-OCT	*Prostanthera serpyllifolia* (R.Br.) Briq. ssp. *microphylla* (R.Br.) Conn
DS	106	AUG-SEP	*Westringia dampieri* R.Br. var. *brachyphylla* Ostenf.

Lauraceae

PC	196		*Cassytha melantha* R.Br.

Leguminosae

Subfamily Caesalpinoideae

SS	208	SEP	*Cassia nemophila* Cunn. ex Vogel var. *nemophila*

Subfamily Mimosoideae

DS	297		*Acacia bidentata* Benth.
DS	296		*Acacia brachyclada* W. Fitzg.
DS	92	MAY-SEP	*Acacia chrysocephala* Maslin
DS	250		*Acacia crassuloides* Maslin
MS	260	DEC-JAN	*Acacia cyclops* Cunn. ex Don
DS	302		*Acacia densiflora* group
MS	180	AUG-SEP	*Acacia dermatophylla* Benth.
DS	150		*Acacia dermatophylla* Benth. var. *crassifolia*
DS	295	SEP	*Acacia ericifolia* Benth.
TS	66	MAY-SEP	*Acacia fragilis* Maiden & Blakely
DS	487	SEP	*Acacia glaucoptera* Benth.
DS	90	MAY-SEP	*Acacia gonophylla* Benth.
SS	463		*Acacia latipes* Benth.
MS	340	SEP	*Acacia ligulata* Cunn. ex Benth.
DS	326		*Acacia* sp. aff. *maxwellii* Maiden & Blakely
SS	147	AUG-SEP	*Acacia* sp. aff. *multilineata* W. Fitzg.
MS	12	MAY-SEP	*Acacia* sp. aff. *murrayana* F. Muell. ex Benth.
DS	301		*Acacia pachypoda* Maslin
DS	318	JUL	*Acacia pritzeliana* C. Gardner
DS	305		*Acacia* sp. aff. *saxatilis* S. Moore (P81)
DS	32	DEC	*Acacia sorophylla* E. Pritzel
SS	173	JUL-AUG	*Acacia* sp. aff. *sphacelata* E. Pritzel (P46)
DS	307		*Acacia* sp. aff. P81
DS	85		*Acacia* sp. indet.
DS	107	JUL-AUG	*Acacia* sp. indet.

Subfamily Papilionoideae

SS	187	AUG	*Aotus* sp. aff. *procumbens* Meissner
DS	211	SEP	*Bossiaea concinna* Benth.
DS	252		*Bossiaea leptacantha* E. Pritzel
SS	164	AUG	*Chorizema aciculare* (DC.) C. Gardner
DS			*Daviesia anceps* Turcz.
SS	35	SEP	*Daviesia benthamii* Meissner
SS	86	DEC	*Daviesia lancifolia* Turcz.
DS	346	JUL-SEP	*Daviesia teretifolia* R.Br. ex Benth.
DS	206	OCT	*Eutaxia* sp. indet.
DS	348		*Gastrolobium reticulatum* (Meissner) Benth.
DS	490	SEP	*Gomphoobium viscidulum* Meissner
SS	221	SEP-OCT	*Oxylobium microphyllum* Benth.
DS	334	SEP	*Oxylobium parviflorum* Benth.
SS	139	AUG-SEP	*Pultenaea adunca* Turcz.
SS	304	SEP	*Pultenaea* sp. aff. *adunca* Turcz.
SS	253	DEC	*Pultenaea elasticha* (F. Muell.) M.D. Crisp
DS	461	SEP	*Pultenaea neurocalyx* Turcz.
DS	151		*Pultenaea verruculosa* Turcz.
DS	263	DEC	*Pultenaea* sp. indet.
DS	264	JUL	*Templetonia sulcata* (Meissner) Benth.

Appendix 1 (continued). Species list

Lobeliaceae			
AS	189	OCT	*Isotoma scapigera* (R.Br.) Don
AS	224	DEC	*Lobelia heterophylla* Labill.
Loganiaceae			
DS	298	SEP	*Logania stenophylla* F. Muell.
Malvaceae			
SS		OCT	*Alyogyne hakeifolia* (Giord.) Alef.
Myoporaceae			
MS	219	OCT	*Eremophila decipiens* Ostenf.
MS	299	SEP	*Eremophila dichroantha* Diels
TS	276	SEP	*Eremophila pachyphylla* Diels
SS	54	MAY	*Myoporum deserti* Cunn. ex Benth.
Myrtaceae			
MS		AUG-SEP	*Astartea ambigua* F. Muell.
MS	186	MAY-SEP	*Baeckea blackettii* F. Muell.
DS	116	AUG-SEP	*Baeckea* sp. aff. *crassifolia* Lindley
LS	188	SEP-OCT	*Baeckea uncinella* Benth.
MS	85	JUL-AUG	*Beaufortia micrantha* Schauer
DS	166	NOV	*Beaufortia schaueri* Preiss ex Schauer
SS	230	JUL,DEC	*Calothamnus gibbosus* Benth.
SS	77	MAR-SEP	*Calothamnus gracilis* R.Br.
SS	271		*Calothamnus quadrifidus* R.Br.
DS	282	SEP	*Calytrix leschenaultii* (Schauer) Benth.
DS	423	SEP	*Calytrix tetragona* Labill.
SS	69	MAR-SEP	*Chamelaucium ciliatum* Desf.
SS	462	SEP	*Chamelaucium megalopetalum* F. Muell. ex Benth.
DS	212	SEP-OCT	*Darwinia diosmoides* (DC.) Benth.
DS	63	MAY-SEP	*Darwinia polycephala* C. Gardner
MAT	81	SEP	*Eucalyptus angulosa* Schauer
MAS	91	DEC-JAN	*Eucalyptus* sp. aff. *angustissima* F. Muell.
ST	58		*Eucalypus conglobata* (R.Br. ex Benth.) Maiden
ST	64	DEC-JAN	*Eucalyptus eremophila* (Diels) Maiden
S	183	DEC-JAN	*Eucalyptus flocktoniae* (Maiden) Maiden
ST			*Eucalyptus forrestiana* Diels ssp. *forrestiana*
ST	384	JUL	*Eucalyptus gardneri* Maiden
ST	29	SEP-OCT	*Eucalyptus goniantha* Turcz. ssp. *goniantha*
MAT	375		*Eucalyptus goniantha* Turcz. ssp. *semiglobosa* Brooker
MAS	197	SEP-OCT	*Eucalyptus gracilis* F. Muell. var. *gracilis*
MAS	133	MAR	*Eucalyptus halophila* D.J. Carr & S.G.M. Carr
MAT	9		*Eucalyptus leptocalyx* Blakely
MAT	41		*Eucalyptus merrickiae* Maiden & Blakely
MAS	342		*Eucalyptus micranthera* F. Muell. ex Benth.
MAT	76		*Eucalyptus occidentalis* Endl. var. *occidentalis*
MAT	383		*Eucalyptus platypus* Hook.
MAT	163	DEC	*Eucalyptus redunca* Schauer
MAS	8	AUG	*Eucalyptus rigens* Brooker
MAS	84		*Eucalyptus tetragona* (R.Br.) F. Muell.
MAT	6	JAN-MAR	*Eucalyptus uncinata* Turcz.
MS	450	SEP	*Leptospermum erubescens* Schauer
MS	337		*Leptospermum roei* Benth.
DS	300		*Leptospermum spinescens* Endl.
TS	121	SEP	*Melaleuca acuminata* F. Muell.
SS	294		*Melaleuca adnata* Turcz.
TS	420		*Melaleuca bracteosa* Turcz.
SS	155	AUG-SEP	*Melaleuca calycina* R.Br.
LS	149	SEP	*Melaleuca calycina* ssp. *dempta* Barlow
TS	4	JAN-FEB	*Melaleuca cardiophylla* F. Muell.

Appendix 1 (continued). Species list

TS	120	AUG-SEP	*Melaleuca* sp. aff. *cardiophylla* F. Muell.
TS		DEC-JAN	*Melaleuca cliffortioides* Diels
LS	31	SEP	*Melaleuca* sp. aff. *conferta* Benth.
TS	68	DEC	*Melaleuca cuneata* Turcz.
TS	453		*Melaleuca cuticularis* Labill.
SS	495		*Melaleuca elliptica* Labill.
MS	3		*Melaleuca glaberrima* F. Muell.
MS	269		*Melaleuca globifera* R.Br.
TS	23	AUG-SEP	*Melaleuca halmaturorum* ssp. *cymbifolia* (Benth.) Barlow
MS	17		*Melaleuca nesophila* F. Muell.
MS	254		*Melaleuca* sp. aff. *pauperiflora* F. Muell.
DS	2	OCT	*Melaleuca pulchella* R.Br.
TS	309		*Melaleuca pungens* Schauer
MS	486		*Melaleuca quadrifaria* F. Muell.
TS	27	SEP-OCT	*Melaleuca* sp. aff. *quadrifaria* F. Muell.
SS	3	AUG	*Melaleuca scabra* R.Br.
MS	255	NOV	*Melaleuca striata* Labill.
TS	96	DEC-JAN	*Melaleuca subtrigona* Schauer
DS	181	SEP	*Melaleuca thymoides* Labill.
TS	19	OCT	*Melaleuca thyoides* Turcz.
LS	175	OCT	*Melaleuca uncinata* R.Br.
TS	308		*Melaleuca* sp. aff. *undulata* Benth.
SS	11	JAN-MAY	*Micromyrtus elobata* (F. Muell.) Benth.
MS	177	AUG-SEP	*Phymatocarpus maxwellii* F. Muell.
DS	272		*Verticordia brownii* (Desf.) DC.
SS	109	AUG	*Verticordia densiflora* Lindley
MS	82	MAY	*Verticordia plumosa* (Desf.) Druce
Olacaceae			
SS	158	AUG-SEP	*Olax benthamiana* Miq.
Pittosporaceae			
CL	93	MAY	*Billardiera coriacea* Benth.
CL	201	OCT	*Billardiera lehmanniana* F. Muell.
SS	192	OCT	*Cheiranthera filifolia* Turcz. var. *filifolia*
Plantaginaceae			
AS	448		*Plantago debilis* R.Br.
Polygalaceae			
CL	446		*Comesperma integerrimum* Endl.
DS	205	OCT	*Comesperma spinosum* F. Muell.
Portulacaceae			
AS	478		*Calandrinia calyptrata* J.D. Hook.
Proteaceae			
DS	231	DEC	*Adenanthos cuneatus* Labill.
MS	249	SEP	*Adenanthos ileticos* E.C. Nelson
DS	87		*Banksia blechnifolia* F. Muell.
TS	37	MAR	*Banksia media* R.Br.
SS	232	DEC	*Banksia nutans* R.Br. var. *nutans*
DS	228		*Banksia petiolaris* F. Muell.
SS	378	JUL	*Banksia pulchella* R.Br.
SS	233	JUL	*Dryandra cuneata* R.Br.
DS	229		*Dryandra ferruginea* Kipp. ex Meissner
DS	156		*Dryandra tenuifolia* R.Br.
DS	488	SEP	*Grevillea nudiflora* Meissner
MS	13	MAY-SEP	*Grevillea pauciflora* R.Br. var. *stenophylla* C. Gardner
LS	34	JAN-SEP	*Grevillea plurijuga* F. Muell.
SS	145		*Grevillea* sp. indet.

Appendix 1 (continued). Species list

SS		SEP	*Hakea brooksiana* F. Muell.
LS	5	JUL-SEP	*Hakea cinerea* R.Br.
SS	220		*Hakea commutata* F. Muell.
DT		JUL	*Hakea laurina* R.Br.
MS	370	JUL	*Hakea lissocarpha* R.Br.
MS	493		*Hakea meisneriana* Kipp. ex Meissner
TS	247		*Hakea multilineata* Meissner
TS	135	AUG-SEP	*Hakea nitida* R.Br.
DS	457		*Hakea oldfieldii* Benth.
LS	227		*Hakea pandanicarpa* R.Br.
TS	1	AUG-SEP	*Hakea platysperma* Hook.
MS	62		*Hakea preissii* Meissner
DS	152		*Isopogon alcicornis* Diels
SS	148	AUG	*Isopogon buxifolius* R.Br.
SS	168		*Isopogon formosus* R.Br.
MS	71		*Persoonia hakeiformis* Meissner
SS	492		*Petrophile fastigiata* R.Br.
SS	169	SEP	*Petrophile squamata* R.Br.
MS	78	DEC	*Petrophile teretifolia* R.Br.
Rhamnaceae			
DS	119	JAN-SEP	*Cryptandra polyclada* Diels
DS	161		*Cryptandra spyridioides* F. Muell.
DS	144	AUG	*Spyridium cordatum* (Turcz.) Benth.
Rubiaceae			
DS	459		*Opercularia vaginata* Labill.
Rutaceae			
SS	101	AUG	*Boronia baeckeacea* F. Muell.
DS	341		*Boronia crassifolia* Bartling
DS	445	SEP	*Boronia crenulata* Smith var. *crenulata*
DS	203	JUL-SEP	*Boronia fabianoides* (Diels) Paul G. Wilson
DS	143	JUL-SEP	*Boronia inornata* Turcz.
DS	194		*Boronia* sp. indet.
SS	172	AUG	*Eriostemon thryptomenoides* S. Moore
SS	104	MAR-AUG	*Microcybe multiflora* Turcz.
SS		SEP	*Microcybe pauciflora* Turcz.
SS	75	MAY-SEP	*Nematolepis phebalioides* Turcz.
MS	14	AUG-SEP	*Phebalium lepidotum* (Turcz.) Paul G. Wilson var. *lepidotum*
Santalaceae			
DS	338	MAR	*Choretrum glomeratum* R.Br.
LS	33	AUG-SEP	*Exocarpos aphyllus* R.Br.
LS	153		*Exocarpos sparteus* R.Br.
SS	494	SEP	*Leptomeria pauciflora* R.Br.
SS	468		*Leptomeria preissiana* (Miq.) A.DC.
DT	65		*Santalum acuminatum* (R.Br.) A.DC.
Sapindaceae			
MS			*Dodonaea amblyophylla* Diels
DS	251		*Dodonaea bursariifolia* F. Muell.
DS			*Dodonaea caespitosa* Diels
SS	74		*Dodonaea stenozyga* F. Muell.
Solanaceae			
DS			* *Solanum nigrum* L.
Stackhousiaceae			
DS	278	SEP	*Stackhousia pubescens* A. Rich.

Appendix 1 (continued). Species list

Sterculiaceae			
DS	266	SEP	*Lasiopetalum indutum* Steudel
Stylidiaceae			
AS	447	SEP	*Levenhookia pusilla* R.Br.
RP	306		*Stylidium assimile* R.Br.
DS	268		*Stylidium repens* R.Br.
Thymelaeaceae			
SS			*Pimelea angustifolia* R.Br.
SS			*Pimelea brevifolia* R.Br.
SS	367	JUL	*Pimelea pelinos* Rye
LS	110	AUG-SEP	*Pimelea suaveolens* (Endl.) Meissner

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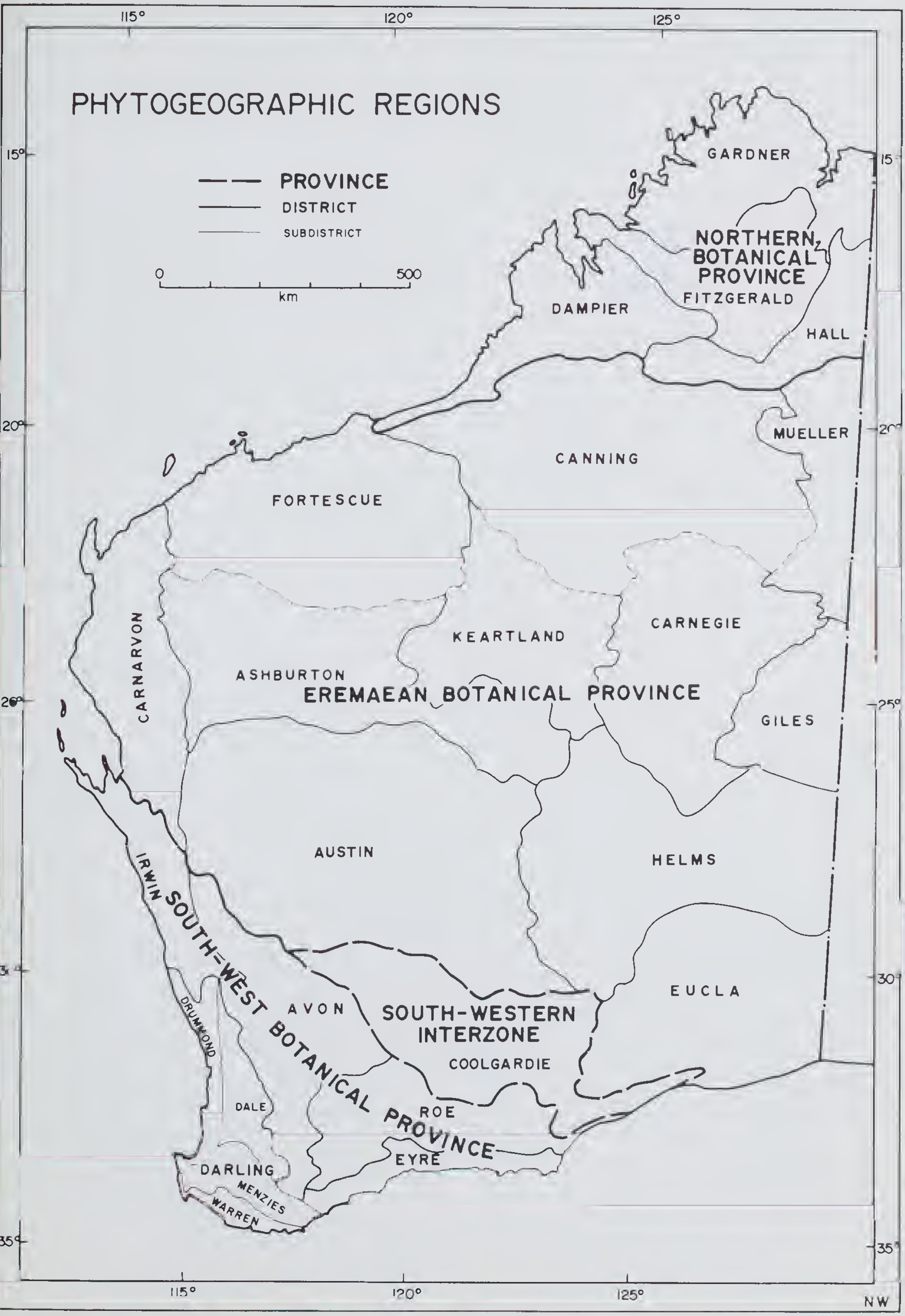

PHYTOGEOGRAPHIC REGIONS OF WESTERN AUSTRALIA DETERMINED BY VEGETATION MAPPING
(from Beard, 1980, Western Australia Herbarium Research Notes No. 3.).

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